Ancient Artifact's Book of Quotes

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Bookmarks on the path to learning binary recursion. Binary recursion always produces a binary result.

Socrates on Unity

Hippias/ In subjects like those, I should be obliged to say the same thing as well as you; but since we are upon the theme of justice, I believe I can now say some things of it, against which, neither you nor any man else can make any objection.

Socrates/ Good God! what a mighty boast is here! Upon my word, Hippias, you have made an admirable discovery! And you have reason to value yourself upon it; for, let me tell you, if you can establish one single opinion of justice, the judges will be no longer divided in their sentiments, there will be no more quarrels, no more suits at law, no more seditions among citizens, no more wars between republics. Indeed, it much troubles me to leave you before you have taught me this secret, which you say you have discovered. *The Memorable Thoughts of Socrates*, By Xenophon, Translated By Edward Bysshe, 1888.

Hippias/ As to such things, I certainly should say the same as you; but we are now talking of justice, or the rule of right and wrong; and I think I have now something to say concerning it, as can hardly be controverted either by you or any other.

Socrates/ By the gods, the discovery will be most useful! The standard of right and wrong once fixed, all difference of opinion, among the judges, all sedition among the people, all lawsuits between citizens, all wars and contentions among communities, must be at an end! And truly it would grieve me to leave you, Hippias, without knowing what this inestimable secret may be that you say you have discovered. *Memoirs Of Socrates*, Book 4, Translated by Sarah Fielding, 1813.

Hippias/ About such matters, Socrates, I, like you, always say the same thing; but concerning justice I think that I have certainly something to say now which neither you nor any other person can refute.

Socrates/ By Hera, it is a great good that you say you have discovered, since the judges will now cease from giving contradictory sentences, the citizens will cease from disputing about what is just, from going to law, and from quarrelling, and communities will cease from contending about their rights and going to war; and I know not how I can part with you till I have learned so important a benefit from its discoverer. *Xenophon's Memorabilia of Socrates*, Book 4, Watson, 1875.

Hippias/ No; on these topics, Socrates, I do as you do and repeat myself. However, to revert to justice (and uprightness), I flatter myself I can at present furnish you with some remarks which neither you nor any one else will be able to controvert.

Socrates/ By Hera!, what a blessing to have discovered! Now we shall have no more divisions of opinion on points of right and wrong; judges will vote

unanimously; citizens will cease wrangling; there will be no more litigation, no more party faction, states will reconcile their differences, and wars are ended. For my part I do not know how I can tear myself away from you, until I have heard from your own lips all about the grand discovery you have made. *Xenophon Memorabilia*, Book 4, Dakyns, 1897

Hippias/ About letters and figures, Socrates, I always say the same thing, just like you. As for Justice, I feel confident that I can now say that which neither you nor anyone else can contradict.

Socrates/ Upon my word, you mean to say that you have made a great discovery, if jurymen are to cease from voting different ways, citizens from disputing and litigation, and wrangling about the justice of their claims, cities from quarrelling about their rights and making war; and for my part, I don't see how to tear myself away from you till I have heard about your great discovery. *Xenophon Memorabilia*, Book 4, Marchant, 1923

Hippias/ About these things, Socrates, I too always say the same things, just as you do. About justice, however, I altogether think that I am now able to say something against which neither you nor anyone else would be able to speak.

Socrates/ By Hera, great is the good you're saying that you have found, if jurors will cease being divided in their votes; citizens will cease contradicting one another, bringing lawsuits, and forming factions concerning the just things; the cities will cease disagreeing about the just things and going to war. And, for my part, I don't know how I could leave before hearing you, who has found a good of such magnitude. *Xenophon Memorabilia*, Book 4, Bonnette, 1994

Life Support Systems.

Definition: A life support system of an organism must acquire from the environment an element from some thing and process that element which it has acquired for a product that maintains and promotes the life of that organism.

Those Systems that Acquire the Element of Material.

1) The Digestive-System.
2) The Musculoskeletal-System.
3) The Respiratory-System.

Those Systems that Acquire the Element of Form.

4) The Ocular-System.
5) The Vestibular-System.
6) The Procreative-System.
7) The Judgmental-System.

Each of the life support systems, except one, is aimed at specific areas of an environment and specific targeted things from which it can abstract and function. I will simply call them particular in regard to the environment.

The remaining system, however, is evolving, through the artifice of language, to function in regard to the entire environment: To process information in regard to the entire biosphere in order to do its own work. In this regard, it is Universal. This one fact, negates the current primitive conceptualization of evolution. That one life support system is called the mind of man.

Through the ability to virtualize an environment a mind can respond to the past, present and future and to anyplace one is able to go, on or off even our own planet.

That system, which can be called our *self*, is that system which is responsible for the behavior of the remaining systems through a function called judgment. Judgment is effected wholly through the artifice of language as expressed in grammars.

Language is Universal and Intelligible, which means it affords a species two things, one absolute and the other relative. The absolute is the unit which affords complete induction and deduction. The other is intelligence which is relative to every particular individual. Thus one's ability to effect life supporting responses is proportional to one's own intelligence. Currently the level of intelligence of the human race can be exampled by the fact that our species does not even have one correct grammar book. This means we are still very much a planet of fools still asking what is wrong with our interstellar neighbors such that they do not talk to us.

Gosh, that is a hard one.

People use the word language today colloquially. We are born with language. Language is a biological given as the method by which we do our particular biologically defined job. Language is effected by standards of behavior called Grammar. As a biological fact, language provides the ability and the method to do out job. That job can be called predictive behavior or even prophecy. What remains is to simply do that job. We call it grammar, standards of behavior by which we attempt to do our biologically defined job.

Thus, one can list our responsibilities for the rendition of judgment according to the perceptible and the intelligible.

The Self.

1) The Judgmental-System.

That system of a living organism which virtualizes the environment in order to predict and respond to any environmental threat at any time, past present or future in order to maintain and promote life over the entire biosphere. It accomplishes this task using the two elements of a thing, or binary information processing:

a) **Analogic**. The application of forms to standard given material.
   1) The Digestive-System.
   2) The Musculoskeletal-System.
   3) The Respiratory-System.

b) **Logic**. The application of materials to standard given forms.
   1) The Ocular-System.
   2) The Vestibular-System.
   3) The Procreative-System.

Thus when we set out to learn grammar, we have to have the intelligence to comprehend simple mathematics. If I have two intelligible concepts, and two perceptible standards of behavior to pair them two, I can only produce four primitive grammars in the intelligible; These are common grammar, arithmetic, algebra and geometry.

Truth: An expression of a One to One Correspondence, i.e., the image or the Law of Identity.

The Number Of His Name

> "The names of the Bible have been a favorite field for gematry. Most famous is the Number of the Beast, given in the Revelation of St. John (13:18) "Here is wisdom. Let him that has understanding count the number of the beast; for it is the number of a man and his number is six hundred three score and six." In spite of the innumerable researches on this question through the centuries it seems impossible to arrive at any definite solution. Clearly many names will have the same number. In the violent theological feuds of the Reformation it was a vicious stroke to write the opponent's name in such a way that his number became the fatal 666 of the beast." ***Number Theory and Its History***, O. Ore © 1948

Reasoning is based on standards of behavior called language, standards of language are based upon a one-to-one correspondence between perception and names. This identity can be expressed in two ways, directly or comparatively. What I mean by this is that we can state an identity in two ways. In the simple, A equals B, and also in the comparative or proportionally, or again metaphorically, as A is to B, so too C is to D. All of language has its foundation in analogy, or again metaphor; as things are in reality, so too are they described linguistically. The inability to maintain the metaphorical, or analogical foundation of language is mental dysfunction. Therefore I will start by disregarding gematry, which is not based upon standards of behavior and hold fast to the standard use of letters for the Hebrew numbering system.

Letter Name	Sound	Number value	Letter Name	Sound	Number value
א Aleph	A,	1.	ב Beth	B,	2.
ג Gimel	G,	3.	ד Daleth	D,	4.
ה He	H,	5.	ו Vav	V,	6.
ז Zayin	Z,	7.	ח Heth	H,	8.
ט Teth	T,	9.	י Yod	Y,	10.
כ Kaph	K,	20.	ל Lamed	L,	30.
מ Mem	M,	40.	נ Nun	N,	50.
ס Samekh	S,	60.	ע Ayin	‘,	70.
פ Pe	P,	80.	צ Tsade	Ts,	90.
ק Qoph	Q,	100.	ר Resh	R,	200.
ש Shin	Sh,	300.	ת Tav	T,	400.

Numerology chart found in ***From One to Zero***. by George Ifrah.

This produces the number 666.

ת Tav	T,	400. Cross or mark.
ר Resh	R,	200. A head.
ס Samekh	S,	60. A basis or support.
ו Vav	V,	6. A hook or a nail.

Under the standard numbering system, it is the only possible result. One might also notice, that the description of these letters also form a metaphor which is going to say exactly the same thing as the result. Notice that a cross has an intersection where both form an identity. The material of a Metaphor is circumscribe by the form of a definition.

"Fix the foundation in a mind by two Tablets of Law, or again Two Witnesses of God."

400, 200, 60, 6. TRSV.

There is no word listed in the Hebrew Dictionary that I have. In fact, T is an ending of a word. The construction itself, that "the first shall be last and the last shall be first" is telling me the order of the letters. Every name is constructed by a set of letters, upon which order is imposed to make a particular name. This is part of the phonetic place value notational system. This is one time that one is told what order the letters go in. Let us look at another.

> Revelation 13:2 And the beast which I saw was like unto a leopard, and his feet were as the feet of a bear, and his mouth as the mouth of a lion: and the dragon gave him his power, and his seat, and great authority.

Who described themselves in the Book using all of these images?

> Hosea 13:7-8. Therefore I will be unto them as a lion; as a leopard by the way will I observe them: I will meet them as a bear that is bereaved of her whelps, and will rend the caul of their heart, and there will I devour them like a lion; the wild beast shall tear them.

The beast is described as God, but the text reveals that it is the name of a man.

> Revelation 12:18 for it is the number of a man;

What is the relationship of God to man given in the scripture?

> Genesis 1:27 So God created man in his own ***image***, in the ***image*** of God created he him; male and female created he them.

Memory of past experience is a fundamental part of language. For a second time one is being told to turn the letters around. Another statement is given here:—

> Revelation 13:14 ... "that they should make an ***image*** to the beast..."

Language is based upon the image. This is the third time one is told to turn the letters around.

> Revelation 13:18 "Let him that has understanding ***count*** the number"

Standards in a language system produce a standard result. In other words, put the numbers in counting sequence—a simple arithmetic ***convention*** of counting. This is the fourth time one is told to turn the

letters around. Language is based upon *stammering*, i.e., recursion. Each of these statements is emphasizing the image, or again, the Law of Identity. Another way of understanding the Law of Identity is perception. All of the principles of language are derived from a one-to-one correspondence with perception, that is called an image. In other words, the image, effects truth as a one-to-one correspondence between reality and perception—so too does language. One is being told that the solution to the puzzle of judgment resides in the image, i.e., Truth.

I will simply reverse the order of the letters, 6, 60, 200, 400, or VSRT. Now what Hebrew word does "VSRT" make? "To shutter" (VSR) with the conversive ending (T, turning the past into the future and the future into the past.) Found in the dictionary written by R. Alcalay. We have been introduced to the *shutter* before in the text,

> And the key of the house of David will I lay upon his shoulder; so he shall open, and none shall shut; and he shall shut, and none shall open.

The key is the image of God, the image which is Truth. What does it mean "to shutter" something? In Scripture, they are a heavily used metaphor. Shutters, gates, doors, windows,—those things which regulate the coming and going of things—i.e. regulate behavior. To shutter something means to regulate its behavior. Language depends upon definition and the sum of definitions.

Taking the word back to the constituent definition adding the conversive metaphor to it, what do we have?—I will show the results of this double locked metaphor.

"To regulate behavior so as to turn
the past into the future and to bring the future to pass."

This is a simple biological fact concerning the human mind as one among a group of environmental acquisition systems of the human body. Its ability to function alone determines if man is cursed or if man is blessed, it alone determines if man is functional or just another beast. The mind regulates behavior through standards of behavior which are learned by experience in order to maintain and promote our life. Language is the simple establishment of a one-to-one correspondence of perception with symbols for the same purpose of any environmental acquisition system of a living organism. The accomplishment of this product determines if that environmental acquisition system is functional and is doing its job. If it is not functional, then it cannot contribute to the body whole the product of life. That organism is doomed to die. The scriptural metaphors in regard to God, life and death are all derived from biological fact. From this alone one can determine if the source of what appears to be mythology has been in fact generated by a living mind. It proves that whatever men call God, is actually the product of a living organism—not a delusional and dysfunctional mind. It also demonstrates that whatever it is, it has survived a great deal longer than the human species.

Language is not defective, it is the only power a mind has. The mind can either use that power or it cannot. The mind is either functional or it is not.

The Art of Peace.

The mind is responsible for human behavior. It functions wholly through the artifice of language. Thus, if one wants to change the behavior of mankind, then one is going to have to teach man truth in regard to language.

A life form can be divided in accordance with those systems by which it negotiates its life with its environment. Some of those systems abstract the form of things while others abstract the material of things, i.e. a life form only abstracts material and form from things in its environment. These are called a things elements and these elements are the foundation of language processing. Even though this has been known for over twenty-five centuries, and it is a fact which many metaphors of the Judeo-Christian Scripture are derived from, there is no formal language training today making this arrangement explicit. Mankind has not been taught to think by definition, nor has any governing system ever been established to divide the population between those who are capable of thinking in accordance with definition, and those who are not. Laws are neither enacted nor enforced to recognize and maintain the definition of man, himself.

Mankind is proto-linguistic, and the only way to bring mankind into a concerted effort into doing its own work is to change language conceptualization to reflect the biological truth of the mind, and its implementation as social practice and policy. This means that there will be a confrontation between the sane and the insane.

If mankind could think in accordance with definition, they would start to see that a history of mental awakening is what is being described in the metaphors of the Judeo-Christian Scripture. The work is written in metaphor because all of language is metaphorical.

A person who is incapable of thinking by definition express language as Jowett did in the following;

> Although all languages have some common principles, there is no primitive form or forms of language known to us, or to be reasonably imagined, from which they are all descended. *Introduction to Cratylus*, Benjamin Jowett.

A person who is capable of thinking by definition realizes that the standard that all languages are derived from is the definition of a thing, this fact is even recognized by living biology. The most pathetic part of language development today is the worthless products of so called linguist who are factually quite incapable of language. A species that uses names does not mean that it is factually linguistic. Names must, by definition, index analog content.

This is an outline demonstrating some historical references and abstractions.

"Tsze-lu said, "The ruler of Wei has been waiting for you, in order with you to administer the government. What will you consider the first thing to be done?"

The Master replied, "What is necessary is to rectify names."

"So! indeed!" said Tsze-lu. "You are wide of the mark! Why must there be such a rectification?"

The Master said, "How uncultivated you are, Yu! A superior man, in regard to what he does not know, shows a cautious reserve.

"If names be not correct, language is not in accordance with the truth of things. If language be not in accordance with the truth of things, affairs cannot be carried on to success.

"When affairs cannot be carried on to success, proprieties and music do not flourish. When proprieties and music do not flourish, punishments will not be properly awarded. When punishments are not properly awarded, the people do not know how to move hand or foot.

"Therefore, a superior man considers it necessary that the names he uses may be spoken appropriately, and also that what he speaks may be carried out appropriately. What the superior man requires is just that, in his words there may be nothing incorrect." Analects by Confucius

On Definition.

11. To the aids which have been mentioned let this one still be added:—Make for yourself a definition or description of the thing which is presented to you, so as to see distinctly what kind of a thing it is in its substance, in its nudity, in its complete entirety, and tell yourself its proper name, and the names of the things of which it has been compounded, and into which it will be resolved.—THE MEDITATIONS OF MARCUS AURELIUS.

10. See what things are in themselves, dividing them into matter, form and purpose. THE MEDITATIONS OF MARCUS AURELIUS ANTONINUS.

Now, however, it is impossible for any of the first elements to be explained by a definition, for it does not admit of any thing else than being named, for it has only a name; but the things that have been composed from these, as they are complex, so their names, when connected together, constitute a definition for a connection of names is the essence of definition. Thus the elements themselves cannot be defined or known, but only perceived, but things compounded of them can be both known and defined, and apprehended by true judgment. *Theaetetus* by Plato, Bohn.

"Therefore one kind of substance can be defined and formulated, i.e. the composite kind, whether it be perceptible or intelligible; but the primary parts of which this consists cannot be defined, since a definitory formula predicates some thing of some thing, and therefore, one part of the definition must play the part of matter and the other that of form." *Metaphysics* by Aristotle. W. D. Ross.

In the beginning was the Word, and the Word was with God, and the Word was God. John 1:1

"It is also clear that the loss of any one of the senses entails the loss of a corresponding portion of knowledge, and that, since we learn either by induction or by demonstration, this knowledge cannot be acquired. Thus demonstration develops from universals, induction from particulars; but since it is possible to familiarize the pupil with even the so-called mathematical abstractions only through induction—i.e. only because each subject genus possesses, in virtue of a determinate mathematical

character, certain properties which can be treated as separate even though they do not exist in isolation—it is consequently impossible to come to grasp universals except through induction. But induction is impossible for those who have not sense-perception. For it is sense-perception alone which is adequate for grasping the particulars: they cannot be objects of scientific knowledge, because neither can universals give us knowledge of them without induction, nor can we get it through induction without sense-perception." *Posterior Analytics*, Aristotle, Ross.

Definition: A thing is any material within some shape, form, or limit.

'A part' may be a part either of the form (i.e. of the essence), or of the compound of the form and the matter, or of the matter itself. *Metaphysics* by Aristotle.

Abstractions from the definition of a thing.

The Elements.

"Further, since the ***matter*** exists, because it is ungenerated, it is a fortiori reasonable that the substance or essence, that which the matter is at any time coming to be, should exist; for if neither essence nor matter is to be, nothing will be at all, and since this is impossible there must be something besides the concrete thing, viz. the ***shape or form***.

But again (B) if we are to suppose this, it is hard to say in which cases we are to suppose it and in which not. For evidently it is not possible to suppose it in all cases; we could not suppose that there is a house besides the particular houses.—Besides this, will the substance of all the individuals, such as of all men, be one? This is paradoxical, for all the things whose substance is one are one. But are the substances many and different? This also is unreasonable.—At the same time, how does the matter become each of the individuals, and ***how is the concrete thing these two elements***?" Metaphysics, by Aristotle.

"(By the *matter* I mean, for instance, the bronze, by the *shape the pattern of its form*, and by the compound of these the statue, the concrete whole.)" *Metaphysics*, by Aristotle.

"For we make it out of brass and the sphere; we bring the form into this particular matter, and the result is a brazen sphere." *Metaphysics*, by Aristotle.

"For the product will always have to be divisible, and one part must be this and another that; I mean the one must be matter and the other form." *Metaphysics*, by Aristotle.

But, leaving these arguments, let us insist on this, that it is not the same thing to change in quantity and in quality. Grant that in quantity a thing is not constant; still it is in respect of its form that we know each thing. Metaphysics by Aristotle.

The *form* of a thing and the *material* difference of a thing are called a thing's *elements*.

These elements do not exist in isolation, they are however, abstracted from things, they are not things in of themselves. Things exist, however, the elements cannot be said to exist. One can say that perception is like a mirror, an image. Thus, since the whole of our body is derived by the image, one can say that man

is created in the image of God. For a mind, this means what is actually denoted in John 1.1. God is the functional principles of language which maintain and promote the life of man.

The Paradigms.

From form, we have no difference, from material we have difference.
Binary 0 and 1.
Equality and Inequality.
Assertion and Denial.

Crafting System.

The definition of a thing denotes a crafting system.

The environmental acquisition systems of a living organism are crafting systems. As a member of that class, the mind is a crafting system; starting with language itself as a crafting system.

Virtualization.

Memory is the virtualization of things.

Equality.

Based on the paradigm of the elements, there are two types of equality recognized in the definition. That equality based upon the paradigm of form is Arithmetic equality expressed in Logic as; A = B. The equality based upon the paradigm of material is Geometric equality, Proportional equality, and Metaphor expressed in Logic as; as A is to B, so too is C to D. As things are in our environment, so too are they expressed in language.

Categories of names.

> I think that you will acknowledge with me, that one principle is applicable to all names, primary as well as secondary, when they are regarded simply as names, there is no difference in them. *Cratylus* by Plato.

> How real existence is to be studied or discovered is, I suspect, beyond you and me. But we may admit so much, that the knowledge of things is not to be derived from names. No; they [things] must be studied and investigated in themselves. *Cratylus* by Plato.

> Well, but do you not see, Cratylus, that he who follows names in the search after things, and analyses their meaning, is in great danger of being deceived? *Cratylus* by Plato.

> no man of sense will like to put himself or the education of his mind in the power of names; neither will he so far trust names or the givers of names as to be confident in any knowledge which condemns himself and other existences to an unhealthy state of unreality; *Cratylus* by Plato.

Naming is based on the paradigm of form, i.e. no difference. Naming a thing or naming an abstraction of an element of a thing does not change the thing, or the abstraction named. Therefore, neither can the manipulation of names ever make a change in reality. As the mind manipulates virtual things, the correct conception of a name is that it is part of an indexing system of the mind. As an index, it must point to commensurate analog material from which abstractions may be made.

These Indexing systems are logic systems, and include, common grammar, arithmetic, algebra, etc., etc. The start of any so called science starts with an exposition of its naming convention, i.e. indexing system, and how it maintains the integrity of constructing things with it, i.e. maintaining the integrity of definition.

And it must be understood, that there is no concept, theory, or practice, of the indexing system which is valid, if it leads to a violation of the original naming convention expressed by definition.

There are three and only three categories of names. We can name a thing directly, we can name a thing's material and we can name the form of a thing.

Naming Conventions.

There are two naming conventions. We can name a thing directly as the *Subject Naming Convention*. We can name the very same thing as a combination of the names of its materials and the names of the forms which contain those materials. This is called the *Predicate Naming Convention*.

Definition.

Definition is abstracted from the form of a thing, which is a container. It means no difference while it also denotes what is included and excluded from a thing. This non-difference applies to the equality between subject and predicates, as well as the convention of names they embody.

Definition is an equation between the *Subject Naming Convention* and the *Predicate Naming Convention*.

The *Subject Naming Convention* is defined in terms of the *Predicate Naming Convention*. Predicates are indexed by name; however, those indexes must index analog material, which is perceptions, or again, abstractions, i.e., the memory of experiences.

Description.

Descriptions are directions to a thing from which an abstraction may be made. Descriptions can point to prior experience in memory, or it can point to

an object already existing, or it can even be a detailed plan for constructing a given thing.

Assertion and Denial.

> Thus, we assume that every predicate can be either truly affirmed or truly denied of any subject, and that 'triangle' means so and so; as regards 'unit' we have to make the double assumption of the meaning of the word and the existence of the thing.
>
> ~ There are some who, as we said, both themselves assert that it is possible for the same thing to be and not to be, and say that people can judge this to be the case. And among others many writers about nature use this language. But we have now posited that it is impossible for anything at the same time to be and not to be, and by this means have shown that this is the most indisputable of all principles.-Some indeed demand that even this shall be demonstrated, but this they do through want of education, for not to know of what things one should demand demonstration, and of what one should not, argues want of education. For it is impossible that there should be demonstration of absolutely everything (there would be an infinite regress, so that there would still be no demonstration); but if there are things of which one should not demand demonstration, these persons could not say what principle they maintain to be more self-evident than the present one.
>
> We can, however, demonstrate negatively even that this view is impossible, if our opponent will only say something; and if he says nothing, it is absurd to seek to give an account of our views to one who cannot give an account of anything, in so far as he cannot do so. For such a man, as such, is from the start no better than a vegetable." Metaphysics by Aristotle, Ross

The first act of assertion is the establishing of a one-to-one correspondence between the name of a thing and its elements. This one-to-one correspondence can be a preexisting social convention or it can be done *in situ*. The inability to agree with a convention of names does not produce a valid argument; as there is no agreed upon convention, one cannot prove a non-existent convention.

The inability to engage in this convention, or to recognize it in a written work, is not the failure of language, but a failure to participate in the convention.

Definition determines the principles of predication, i.e., of assertion and denial.

Denial can also take the form of asserting a difference. For example, John is in the car.

Types of expressions for negation are;

is not, is in, is over, is beside, is taller, is shorter, is upon, is with, is of, etc.

As the relative difference between terms cannot be predicated of either term, then one is left with the obvious, it is a negation.

Division of Language.

Language branches, of which there are two, are divided in accordance with the elements of a thing, taking one element as a given and the other element

must be supplied or applied in order to make the language. If the material is given, then the form must be applied; these are analog languages. If the form is a given the material must be supplied; these are logics such as common grammar, arithmetic, algebra, etc.

Logics as form are indexing systems for analog content. That analog content is reference by the index. How well we can use the indexing system to group analog content is determined by our ability to see the similar idea in the many examples, i.e. analog indexing.

An analog language provides perceptions which can be indexed. The figures in the *Elements* of Euclid are standard analogs from which abstractions can be recursively made in memory, i.e. the figure is an analog language. One learns how to construct the analog and actually speak the language through standards of behavior. An analog language starts with a given material to which one can only add form.

So in logics, the form is a given, and the material difference must be supplied to effect the language.

In analogics, the material is a given, and the form must be applied to effect the language.

Analog languages cover all standard human behaviors which are effected to construct things.

As the mind is wholly linguistic by function, human behavior is a language. Human behavior can then be linguistic, or it can be gibberish.

Social Governments.

A population itself may be divided between those who are capable of thinking in accordance with definition, and those who can only think by enumeration. Those who can only think in accordance with enumeration are factually blind to language, they are proto-linguistic. This means that their behavior is open to misuse by other members of society. The greatest abusers are governing bodies political, commercial and religious. This abuse can only be mitigated by education and law.

The first order of business is to construct, maintain, and promote thought in accordance with definition. This is accomplished through education.

Formal Language Training.

Formal language training pairs, by definition, logic with analogic.

1. The mind is responsible for the behavior of the body within which it resides. It learns that behavior by experience.

The first form of standard behavior a mind is responsible for is language. In other words, one must establish as a teaching method analog languages. Through them paralleled logic systems are learnt.

It was not out of love for playing with his pencil that Plato demanded; Let no one ignorant of Geometry enter here.

Currently, Lucid Dreaming has been reintroduced to mankind. Lucid Dreaming is an analog environment, i.e. it an analog language; however, it is not the mind teaching itself. Relation to self is inadmissible.

As language is the only power a mind has, it is truth in language which is the only path to changing the behavior of man.

You shall know the truth, and the truth shall set you free.

Is a statement that does not mean an enumerated fact, but a form over human psychology, itself.

Language is a biological product of an environmental acquisition system of the body. Through its functioning one is led to a biological fact that a sapient species is responsible for the production of a life supporting ecosystem as the uniting factor for sapient life. Teach man his biologically defined job, and one can teach a unity of sapient purpose. Eventually, man will understand that the metaphor's of the Judeo-Christian Scripture resolve to biological fact. The text states in several places that it is sealed to man's understanding until a particular time in human history. Metaphor, or proportional reasoning, is what language is based upon; therefore, by language one can test the functionality of the mind. The text can be seen as a question; how does the reader's mind process what is being said?

A house divided against itself cannot stand. Only by learning the biologically defined job of man can man be united.

> And the nations were angry, and your wrath is come, and the time of the dead, that they should be judged, and that you should give reward unto your servants the prophets, and to the saints, and them that fear your name, small and great; and should destroy them which destroy the earth. Revelation 11:18

The whole of the earth has always been the Promised Land, from the story of creation, to Adam and Eve, to the story of Moses, to the end of the Book, our environment is, as a sapient species, our job to cultivate. It is a result of the definition of a functional mind. Not only is our own body our home, this entire planet is also. The principles of language are the same everywhere in all of creation, therefore so too is sapient behavior. What we do to ourselves, we will do to others. To believe that intelligent life in the Universe does not know how to protect itself from developing species is a foolish misjudgment.

What is a Home?

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By what principle do I call something "a home"? There are several so-called definitions of the term in a common dictionary—yet a common dictionary is written by persons who apparently never read—or understood certain passages of Aristotle.

As a thing is defined in terms of any material in any form—or shape—what-so-ever, so too a definition is no more than a convention of names for *a thing* equated to the names of its *forms* and *materials*. And so, one knows that if a home is a thing, it consists of some boundary within which resides certain materials.

I am interested not in "home" as a universal but in the particular. If one desires and if one is capable—after examining particulars—a universal notion may be developed. What are the particulars of "my home" and why?

The human mind has a certain function and in that regard a home in some way is a means of attaining to its ends. One, then, should define a man, part off mind as the responsible agent in man, and perhaps from these one can grasp what it is that a home does for man, what it *is*.

There are seven parts to the definition of man—this is not my doing, for some reason one might say that I came to learn this from either having a form of schizophrenia—or by being taught by divine intervention. In regard solely to the matter at hand, it does not matter so much as the how I came to understand, but only if what I have come to understand is true or not. I have as much capability with a physical defect as I do comprehending superior genius.

As it stands at present, I would have to agree with what I think I have learned—a man is a collection of seven life sense systems. Following is my feeble way of recording that understanding.

I start with a definition—a universal definition of human body life sense system.

Definition: A human body life sense system is that human body system which must acquire something from the environment, process that which it has acquired for a product that sustains and promotes that human life.

Now if one has not arrived at this universal definition through particular abstractions, one can still use the definition to determine class membership.

Now how is this possible? How is it possible to go from a definition as a social convention of names to a tool by which to judge class membership, and what is more, to effect all human judgments? It goes back to the start—it goes back to what a convention of names *is* and what it means.

If one is interested in what happens to the ability to reason at all when this convention is violated, all one has to do is read Plato's *Parmenides*. That which has the same name is the same by that standard which conventionalized the name. Therefore, if ones standard of naming is not true—neither is ones ability to use those names in processes of reasoning. The mind has failed in its job.

And so from here on, I must make an assumption—that I have a naming convention that is based on the paradigm of *a thing*, and that one does not give the same name to a thing, a things form, nor the material in that things form. It is the paradigm of *a thing* that determines all of the laws of predication. Predication is the inverse function of abstraction.

To make one more digression, a convention of names also does something almost as wonderful for man. Each of us, individually is too stupid most of the time to be able to make a particular abstraction, a definition is a tool we can use, a standard, by which this fault in our intelligence can be circumvented. A convention of names makes definition possible. Definition makes judgment possible. It is a means of opening up the eyes of the blind.

Using the universal definition, I can then locate the seven human body life sense systems found in the many life sense system metaphors of the Bible. From these, I should get some idea of what a home should contain, and what its boundaries are.

1) The Digestive System.

To acquire food so that it can process it for the product of human flesh and energy that sustains and promotes the life of the human body.

2) Cardiovascular System.

To acquire oxygen for the product of human flesh and energy that sustains and promotes the life of the human body.

3) The Ocular System.

To acquire Geometric information for the product of environmental mapping that sustains and promotes the life of the human body.

4) The Vestibular System.

To acquire gravitational equilibrium or the product of placement that sustains and promotes the life of the human body.

5) Manipulative System.

To acquire the raw material for crafts that sustain and promote the life of the human body.

6) Procreation is a sense.

To acquire the deoxyribonucleic acid (DNA) for offspring that sustain and promote the life of the human body.

7) Judgmental system.

To acquire experience and process it so that we can predict the results of human behavior that sustains and promote our life.

If I were the originator of these ideas, I, myself, would better understand them. These ideas were made known to me by a teacher I have never seen, one that has been around mankind for a very long time—or perhaps I am just insane.

Taking these areas of life sense systems, one might then conclude that a home,

1) Has an area for food storage, preparation, and serving.

2) Clean air, and exercise equipment.

3) Certain visual qualities.

4) Certain qualities for footing.

5) Areas for craft, tools, and such.

6) A mate that will be there in the long haul for all the things one needs for rearing and teaching children.

7) Educational areas for teaching the principles of thought, and the manipulation of one's environment to do the job a mind is suppose to do.

All we do is for products that sustain and promote human life, if that is, we are productive as mind.

Ones home, is ones small area of reality that one orders for the sustenance and promotion of ones own life. In fact, there is not one thing that one can come up with, in all of the realm of reason, that can be called right and yet contradict this very seven part definition of man himself. And, it begins with the Word.

These areas of "righteousness" also allow me to judge myself and my fellow man.

1) If I do not know the principles of diet, I am not doing my job. If someone tries to put me on a diet of things not good for my body, they are a whore.

2) If I do not know the principles of good air, and how to exercise that system, I am not doing my job. If someone tries to encourage me away from these goods, they are a whore.

3) If someone tries to teach me that perception, which has in of itself, no judgmental qualities, is responsible for bad judgment, they are a whore.

4) If someone tries to get me to walk in unsafe places, they are a whore.

5) If someone tries to steal my time with non-sense, instead of teaching me craft, they are a whore.

6) If someone tries to teach me that sex is an elective, that promiscuity is not horrendous, they are a whore.

7) When one denies the foundation of reason itself, by refusing to a convention of names, and all it implies, a person is a whore.

When one denies certain principles of moral and ethical code, in regard to any body sense, they cannot attain to a home that is true to its definition. And when one has to live with a person who denies such, ones home becomes divided.

A whore is the death of mankind—and this is the whore that man, in general seems to worship. A whore is anyone who takes a designed function and negates it (we have taken a particular and made a universal of it) thus negating the principles of life itself. For the most part, this is something done not from an over abundance of wisdom, but from simple stupidity.

And so, by definition, we are all whores, some just work to become less so than others.

Argue with Ourselves

Always, in dealing with any proposition, be on the look-out for a line of argument both pro and con: and on discovering it at once set about looking for the solution of it: for in this way you will soon find that you have trained yourself at the same time in both asking questions and answering them. **If we cannot find any one else to argue with, we should argue with ourselves.** *Topics* by Aristotle, W.D. Ross.

In dealing with any thesis, be on the look-out for a line of argument both pro and con; and on discovering it at once set about looking for the solution of it; for in this way you will soon find that you have trained yourself at the same time in both asking questions and answering them. **If we cannot find any one else to argue with, we should argue with ourselves**. *Topics* by Aristotle, W. A. Pickard-Cambridge.

Class and Member

We still make the distinction even if we cannot conceive or apprehend any other example beside the particular thing. This may, of course, sometimes be the case: it might be, for instance, that only one circle could be found; yet none the less the difference will remain between the being of circle and of this particular circle, the one being form, the other form in matter, i.e. a particular thing. *Aristotle's Basic Works*.

Aristotle

ON DEFINITION

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Introduction

On Sophistical Refutations
by Aristotle 350 BC

That some reasonings are genuine, while others seem to be so but are not, is evident. This happens with arguments, as also elsewhere, through a certain likeness between the genuine and the sham. For physically some people are in a vigorous condition, while others merely seem to be so by blowing and rigging themselves out as the tribesmen do their victims for sacrifice; and some people are beautiful thanks to their beauty, while others seem to be so, by dint of embellishing themselves. So it is, too, with inanimate things; for of these, too, some are really silver and others gold, while others are not and merely seem to be such to our sense; e.g. things made of litharge and tin seem to be of silver, while those made of yellow metal look golden. In the same way both reasoning and refutation are sometimes genuine, sometimes not, though inexperience may make them appear so: for inexperienced people obtain only, as it were, a distant view of these things. For reasoning rests on certain statements such that they involve necessarily the assertion of something other than what has been stated, through what has been stated: refutation is reasoning involving the contradictory of the given conclusion. Now some of them do not really achieve this, though they seem to do so for a number of reasons; and of these the most prolific and usual domain is the argument that turns upon names only. It is impossible in a discussion to bring in the actual things discussed: we use their names as symbols instead of them; and therefore we suppose that what follows in the names, follows in the things as well, just as people who calculate suppose in regard to their counters. But the two cases (names and things) are not alike. For names are finite and so is the sum–total of formulae, while things are infinite in number. Inevitably, then, the same formulae, and a single name, have a number of meanings. Accordingly just as, in counting, those who are not clever in manipulating their counters are taken in by the experts, in the same way in arguments too those who are not well acquainted with the force of names misreason both in their own discussions and when they listen to others. For this reason, then, and for others to be mentioned later, there exists both reasoning and refutation that is apparent but not real. Now for some people it is better worth while to seem to be wise, than to be wise without seeming to be (for the art of the sophist is the semblance of wisdom without the reality, and the sophist is one who makes money from an apparent but unreal wisdom); for them, then,

it is clearly essential also to seem to accomplish the task of a wise man rather than to accomplish it without seeming to do so. To reduce it to a single point of contrast it is the business of one who knows a thing, himself to avoid fallacies in the subjects which he knows and to be able to show up the man who makes them; and of these accomplishments the one depends on the faculty to render an answer, and the other upon the securing of one. Those, then, who would be sophists are bound to study the class of arguments aforesaid: for it is worth their while: for a faculty of this kind will make a man seem to be wise, and this is the purpose they happen to have in view.

Plato and Aristotle

There are so many differences between the ideas presented by Plato in his dialogs and Aristotle in his writings that it is often difficult to imagine how Aristotle could have come away from such a long discourse with Plato and yet not be nearer to comprehending the faults in his reasoning. However, it is Aristotle's reflections and conclusions that give one a broader field by which to think about the topic of definition. The answers to all of his questions are incredibly simple, yet he does not appear to have discovered them. His understanding of what a subject and predicate was caused him to error throughout his work. His conception actually stands in sharp contrast to Plato's understanding, the work Parmenides being designed to lead the reader into abstracting the principles of predication.

What is interesting, though, are the generations who could do no better than to repeat Aristotle and not have a clue as to Plato's meaning.

For me, reading popular philosophers, popular texts books, is a painful experience. I approach it as a study in aberrant psychology. Reading Aristotle is painful—he is very confused, and long winded. Aristotle, when dealing with the principles of Metaphysics, was, a fool.

I am not going to footnote the entire text, I have limited patience. I used a word macro to abstract these quotes. I use the macro method in order to pull out certain words and trace them through entire works.

Aristotle On Definition

Posterior Analytics: But ***induction*** is impossible for those who have not ***sense–perception***. For it is ***sense–perception*** alone which is adequate for grasping the particulars: they cannot be objects of scientific knowledge, because neither can universals give us knowledge of them without induction, ***nor can we get it through induction without sense–perception***.~

Induction too will sufficiently convince us of this difference; for never yet by defining anything–essential attribute or accident–did we get knowledge of it.

Posterior Analytics:

Posterior Analytics: Definition is a 'thesis' or a 'laying something down', since the arithmetician lays it down that to be a unit is to be quantitatively indivisible; but it is not a hypothesis, for to define what a unit is, is not the same as to affirm its existence.

Posterior Analytics: The same is true of definitions, since a definition is either a primary premise or a conclusion of a demonstration, or else only differs from a demonstration in the order of its terms.

Posterior Analytics: Definitions require only to be understood, and this is not hypothesis–unless it be contended that the pupil's hearing is also an hypothesis required by the teacher.

Posterior Analytics: A further distinction is that all hypotheses and illegitimate postulates are either universal or particular, whereas a definition is neither.[1]

Posterior Analytics: Induction too will sufficiently convince us of this difference; for never yet by defining anything–essential attribute or accident–did we get knowledge of it. Again, if to define is to acquire knowledge of a substance, at any rate such attributes are not substances.

It is evident, then, that not everything demonstrable can be defined. What then? Can everything definable be demonstrated, or not? There is one of our previous arguments which covers this too. Of a single thing quâ single there is a single scientific knowledge. Hence, since to know the demonstrable scientifically is to possess the demonstration of it, an impossible consequence will follow:—possession of its definition without its demonstration will give knowledge of the demonstrable.

Moreover, the basic premises of demonstrations are *definitions, and it has already been shown that these will be found indemonstrable*; either the basic premises will be demonstrable and will depend on prior premises, and the regress will be endless; or the primary truths will be indemonstrable definitions.

But if the definable and the demonstrable are not wholly the same, may they yet be partially the same? Or is that impossible, because there can be no demonstration of the definable? *There can be none, because definition is of the essential nature or being of*

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[1] "Besides, every definition is always universal and commensurate:" ***Posterior Analytics***:

something[2], and all demonstrations evidently posit and assume the essential nature–mathematical demonstrations, for example, the nature of unity and the odd, and all the other sciences likewise. *Moreover, every demonstration proves a predicate of a subject as attaching or as not attaching to it*, but in definition one thing is not predicated of another; we do not, e.g. predicate animal of biped nor biped of animal, *nor yet figure of plane–plane not being figure nor figure plane*[3]. Again, to prove essential nature is not the same as to prove the fact of a connection. Now definition reveals essential nature, demonstration reveals that a given attribute attaches or does not attach to a given subject; but different things require different demonstrations—unless the one demonstration is related to the other as part to whole.

So it emerges that not all the definable is demonstrable nor all the demonstrable definable; and we may draw the general conclusion that there is no identical object of which it is possible to possess both a definition and a demonstration. It follows obviously that definition and demonstration are neither identical nor contained either within the other: if they were, their objects would be related either as identical or as whole and part.

Posterior Analytics: 1 How then by definition shall we prove substance or essential nature? We cannot show it as a fresh fact necessarily following from the assumption of premises admitted to be facts–the method of demonstration: we may not proceed as by induction to establish a universal on the evidence of groups of particulars which offer no exception, because induction proves not what the essential nature of a thing is but that it has or has not some attribute. *Therefore, since presumably one cannot prove essential nature by an appeal to sense perception or by pointing with the finger, what other method remains*?

2 To put it another way: how shall we by definition prove essential nature? He who knows what human—or any other—nature is, must know also that man exists; for no one knows the nature of what does not exist—one can know the meaning of the phrase or name 'goat-stag' but not what the essential nature of a goat-stag is. But further, if definition can prove what is the essential nature of a thing, can it also prove that it exists? And how will it prove them both by the same process, since definition exhibits one single thing and demonstration another single thing, and what human nature is and the fact that man exists are not the same thing? Then too we hold that it is by demonstration that the being of everything must be proved—unless indeed *to be* were its essence; and, since being is not a genus, it is not the essence of anything. Hence the *being* of anything as fact is matter for demonstration; and this is the actual procedure of the sciences, for the geometer assumes the meaning of the word triangle, but that it is possessed of some attribute he proves. What is it, then, that we shall prove in defining essential nature? Triangle? In that case a man will know by definition what a thing's nature is without knowing whether it exists. But that is impossible.

Posterior Analytics: Moreover it is clear, if we consider the methods of defining actually in use, that definition does not prove that the thing defined exists: since even if there does actually exist something which is equidistant from a center, yet why should the thing

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[2] It would have been easier to see Plato here, if he would have used "first principle" instead of "essential nature."

[3] This seems to have been missed by geometers. This follows from the principles of predication.

named in the definition exist? Why, in other words, should this be the formula defining circle?[4] One might equally well call it the definition of mountain copper. For definitions do not carry a further guarantee that the thing defined can exist or that it is what they claim to define: one can always ask why.

Posterior Analytics: Since, therefore, to define is to prove either a thing's essential nature or the meaning of its name, we may conclude that *definition, if it in no sense proves essential nature, is a set of words signifying precisely what a name signifies.* But that were a strange consequence; for (1) both what is not substance and what does not exist at all would be definable, *since even non-existents can be signified by a name*: (2) all sets of words or sentences would be definitions, since any kind of sentence could be given a name[5]; so that we should all be talking in definitions, and even the Iliad would be a definition: (3) no demonstration can prove that any particular name means any particular thing: neither, therefore, do definitions, in addition to revealing the meaning of a name, also reveal that the name has this meaning. *It appears then from these considerations that neither definition and syllogism nor their objects are identical, and further that definition neither demonstrates nor proves anything, and that knowledge of essential nature is not to be obtained either by definition or by demonstration.*

We must now start afresh and consider which of these conclusions are sound and which are not, and what is the nature of definition, and whether essential nature is in any sense demonstrable and definable or in none.

Posterior Analytics: Since definition is said to be the statement of a thing's nature, obviously one kind of definition will be a statement of the meaning of the name, or of an equivalent nominal formula. A definition in this sense tells you, e.g. the meaning of the phrase 'triangular character'. When we are aware that triangle exists, we inquire the reason why it exists. But it is difficult thus to learn the definition of things the existence of which we do not genuinely know—the cause of this difficulty being, as we said before, that we only know accidentally whether or not the thing exists. Moreover, a statement may be a unity in either of two ways, by conjunction, like the Iliad, or because it exhibits a single predicate as inhering not accidentally in a single subject.

Posterior Analytics: That then is one way of defining definition[6]. Another kind of definition is a formula exhibiting the cause of a thing's existence. Thus the former signifies without proving, but the latter will clearly be a quasi–demonstration of essential nature, differing from demonstration in the arrangement of its terms. For there is a difference between stating why it thunders, and stating what is the essential nature of thunder; since the first statement will be 'Because fire is quenched in the clouds', while the statement of what the nature of thunder is will be 'The noise of fire being quenched in the clouds'. Thus the same statement takes a different form: in one form it is continuous demonstration, in the other definition. Again, thunder can be defined as noise in the clouds, which is the

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[4] Aristotle is demonstrating that he does not know the difference between definition and description. This would produce a great source of confusion. Thus what he is saying here refers to description, not definition.

[5] This is exactly what Gödel did, only he, and his supporters, were too stupid to see their contradictions.

[6] Without the distinction between definition and description, this logical error is unavoidable.

conclusion of the demonstration embodying essential nature. On the other hand the definition of immediates is an indemonstrable positing of essential nature.

Posterior Analytics: We conclude then that definition is (a) an indemonstrable statement of essential nature, or (b) a syllogism of essential nature differing from demonstration in grammatical form, or (c) the conclusion of a demonstration giving essential nature.

Posterior Analytics: Our discussion has therefore made plain (1) in what sense and of what things the essential nature is demonstrable, and in what sense and of what things it is not; (2) what are the various meanings of the term definition, and in what sense and of what things it proves the essential nature, and in what sense and of what things it does not; (3) what is the relation of definition to demonstration, and how far the same thing is both definable and demonstrable and how far it is not.

Posterior Analytics: The author of a hand-book on a subject that is a generic whole should divide the genus into its first infimae species—number e.g. into triad and dyad—and then endeavour to seize their definitions by the method we have described—the definition, for example, of straight line or circle or right angle. After that, having established what the category is to which the subaltern genus belongs—quantity or quality, for instance—he should examine the properties 'peculiar' to the species, working through the proximate common differentiæ. He should proceed thus because the attributes of the genera compounded of the infimae species will be clearly given by the definitions of the species; since the basic element of them all is the definition, i.e. the simple infirma species, and the attributes inhere essentially in the simple infimae species, in the genera only in virtue of these.

Definition By Division[7]

Posterior Analytics: In establishing a definition by division one should keep three objects in view: (1) the admission only of elements in the definable form[8], (2) the arrangement of these in the right order, (3) the omission of no such elements. The first is feasible because one can establish genus and differentia through the topic of the genus, just as one can conclude the inherence of an accident through the topic of the accident. The right order will be achieved if the right term is assumed as primary, and this will be ensured if the term selected is predicable of all the others but not all they of it; since there must be one such term. Having assumed this we at once proceed in the same way with the lower terms; for our second term will be the first of the remainder, our third the first of those which follow the second in a 'contiguous' series, since when the higher term is excluded, that term of the remainder which is 'contiguous' to it will be primary, and so on.

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[7] This is really not definition at all—one may say it is "distinction" but not "definition". Did Plato make the same mistake? First of all, this method relies on the ability to add unit sentences to make a statement, and therefore the results are not primary.

[8] I think if Aristotle had ever mentioned the "definable form" to Plato, Plato must have shook his head and walked away. Since predication is the inverse function of abstraction, and that form and material are the elements of a thing, one cannot predicate of form or material difference—"definable form" speaks a volume against Aristotle's understanding. One can describe a construction of a thing by which the abstraction of form may be made, but that is not a definition.

Our procedure makes it clear that no elements in the definable form have been omitted: we have taken the differentia that comes first in the order of division, pointing out that animal, e.g. is divisible exhaustively into A and B, and that the subject accepts one of the two as its predicate. Next we have taken the differentia of the whole thus reached, and shown that the whole we finally reach is not further divisible—i.e. that as soon as we have taken the last differentia to form the concrete totality, this totality admits of no division into species. For it is clear that there is no superfluous addition, since all these terms we have selected are elements in the definable form; and nothing lacking, since any omission would have to be a genus or a differentia. Now the primary term is a genus, and this term taken in conjunction with its differentiæ is a genus: moreover the differentiæ are all included, because there is now no further differentia; if there were, the final concrete would admit of division into species, which, we said, is not the case.

Posterior Analytics: To resume our account of the right method of investigation: We must start by observing a set of similar—i.e. specifically identical—individuals, and consider what element they have in common. We must then apply the same process to another set of individuals which belong to one species and are generically but not specifically identical with the former set. When we have established what the common element is in all members of this second species, and likewise in members of further species, we should again consider whether the results established possess any identity, and persevere until we reach a single formula, since this will be the definition of the thing. But if we reach not one formula but two or more, evidently the definiendum cannot be one thing but must be more than one. I may illustrate my meaning as follows. If we were inquiring what the essential nature of pride is, we should examine instances of proud men we know of to see what, as such, they have in common; e.g. if Alcibiades was proud, or Achilles and Ajax were proud, we should find on inquiring what they all had in common, that it was intolerance of insult; it was this which drove Alcibiades to war, Achilles wrath, and Ajax to suicide. We should next examine other cases, Lysander, for example, or Socrates, and then if these have in common indifference alike to good and ill fortune, I take these two results and inquire what common element have equanimity amid the vicissitudes of life and impatience of dishonour. If they have none, there will be two genera of pride. Besides, every definition is always universal and commensurate: the physician does not prescribe what is healthy for a single eye, but for all eyes or for a determinate species of eye. It is also easier by this method to define the single species than the universal, and that is why our procedure should be from the several species to the universal genera—this for the further reason too that equivocation is less readily detected in genera than in infimae species. Indeed, perspicuity is essential in definitions, just as inferential movement is the minimum required in demonstrations; and we shall attain perspicuity if we can collect separately the definition of each species through the group of singulars which we have established e.g. the definition of similarity not unqualified but restricted to colours and to figures; the definition of acuteness, but only of sound—and so proceed to the common universal with a careful avoidance of equivocation. *We may add that if dialectical disputation must not employ metaphors, clearly metaphors and metaphorical expressions are precluded in definition: otherwise dialectic would involve metaphors.*

Posterior Analytics: The truth is that cause, effect, and subject are reciprocally predicable in the following way. If the species are taken severally, the effect is wider than

the subject (e.g. the possession of external angles equal to four right angles is an attribute wider than triangle or are), but it is coextensive with the species taken collectively (in this instance with all figures whose external angles are equal to four right angles). And the middle likewise reciprocates, for the middle is a definition of the major; which is incidentally the reason why all the sciences are built up through definition.

Categories:

Categories: Things are said to be named 'equivocally' when, though they have a common name, the definition corresponding with the name differs for each. Thus, a real man and a figure in a picture can both lay claim to the name 'animal'; yet these are equivocally so named, for, though they have a common name, the definition corresponding with the name differs for each. For should any one define in what sense each is an animal, his definition in the one case will be appropriate to that case only.

Categories: On the other hand, things are said to be named 'univocally' which have both the name and the definition answering to the name in common. A man and an ox are both 'animal', and these are univocally so named, inasmuch as not only the name, but also the definition, is the same in both cases: for if a man should state in what sense each is an animal, the statement in the one case would be identical with that in the other.

Categories: It is plain from what has been said that both the name and the definition of the predicate must be predicable of the subject. For instance, 'man' is predicated of the individual man. Now in this case the name of the species man' is applied to the individual, for we use the term 'man' in describing the individual; and the definition of 'man' will also be predicated of the individual man, for the individual man is both man and animal. Thus, both the name and the definition of the species are predicable of the individual.

Categories: With regard, on the other hand, to those things which are present in a subject, it is generally the case that neither their name nor their definition is predicable of that in which they are present. Though, however, the definition is never predicable, there is nothing in certain cases to prevent the name being used. For instance, 'white' being present in a body is predicated of that in which it is present, for a body is called white: the definition, however, of the colour white' is never predicable of the body.

Categories: Of species themselves, except in the case of such as are genera, no one is more truly substance than another. We should not give a more appropriate account of the individual man by stating the species to which he belonged, than we should of an individual horse by adopting the same method of definition. In the same way, of primary substances, no one is more truly substance than another; an individual man is not more truly substance than an individual ox.

Categories: It is, then, with good reason that of all that remains, when we exclude primary substances, we concede to species and genera alone the name 'secondary substance', for these alone of all the predicates convey a knowledge of primary substance. For it is by stating the species or the genus that we appropriately define any individual man; and we shall make our definition more exact by stating the former than by stating the latter. All other things that we state, such as that he is white, that he runs, and so on, are irrelevant to the definition. Thus it is just that these alone, apart from primary substances, should be called substances.

Categories: It is a common characteristic of all substance that it is never present in a subject. For primary substance is neither present in a subject nor predicated of a subject; while, with regard to secondary substances, it is clear from the following arguments (apart from others) that they are not present in a subject. For 'man' is predicated of the individual man, but is not present in any subject: for manhood is not present in the individual man. In the same way, 'animal' is also predicated of the individual man, but is not present in him. Again, when a thing is present in a subject, though the name may quite well be applied to that in which it is present, the definition cannot be applied. Yet of secondary substances, not only the name, but also the definition, applies to the subject: we should use both the definition of the species and that of the genus with reference to the individual man. Thus substance cannot be present in a subject.

Categories: Yet this is not peculiar to substance, for it is also the case that differentiæ cannot be present in subjects. The characteristics 'terrestrial' and 'two-footed' are predicated of the species 'man', but not present in it. For they are not in man. Moreover, the definition of the differentia may be predicated of that of which the differentia itself is predicated. For instance, if the characteristic 'terrestrial' is predicated of the species 'man', the definition also of that characteristic may be used to form the predicate of the species 'man': for 'man' is terrestrial.

Categories: It is the mark of substances and of differentiæ that, in all propositions of which they form the predicate, they are predicated univocally. For all such propositions have for their subject either the individual or the species. It is true that, inasmuch as primary substance is not predicable of anything, it can never form the predicate of any proposition. But of secondary substances, the species is predicated of the individual, the genus both of the species and of the individual. Similarly the differentiæ are predicated of the species and of the individuals. Moreover, the definition of the species and that of the genus are applicable to the primary substance, and that of the genus to the species. For all that is predicated of the predicate will be predicated also of the subject. Similarly, the definition of the differentiæ will be applicable to the species and to the individuals. But it was stated above that the word 'univocal' was applied to those things which had both name and definition in common. It is, therefore, established that in every proposition, of which either substance or a differentia forms the predicate, these are predicated univocally.

Categories: Occasionally, perhaps, it is necessary to coin words, if no word exists by which a correlation can adequately be explained. If we define a rudder as necessarily having reference to a boat, our definition will not be appropriate, for the rudder does not have this reference to a boat qua boat, as there are boats which have no rudders. Thus we cannot use the terms reciprocally, for the word 'boat' cannot be said to find its explanation in the word 'rudder'. As there is no existing word, our definition would perhaps be more accurate if we coined some word like 'ruddered' as the correlative of 'rudder'. If we express ourselves thus accurately, at any rate the terms are reciprocally connected, for the 'ruddered' thing is 'ruddered' in virtue of its rudder. So it is in all other cases. A head will be more accurately defined as the correlative of that which is 'headed', than as that of an animal, for the animal does not have a head qua animal, since many animals have no head.

Categories: It may be questioned whether it is true that no substance is relative, as seems to be the case, or whether exception is to be made in the case of certain secondary substances. With regard to primary substances, it is quite true that there is no such

possibility, for neither wholes nor parts of primary substances are relative. The individual man or ox is not defined with reference to something external. Similarly with the parts: a particular hand or head is not defined as a particular hand or head of a particular person, but as the hand or head of a particular person. It is true also, for the most part at least, in the case of secondary substances; the species 'man' and the species 'ox' are not defined with reference to anything outside themselves. Wood, again, is only relative in so far as it is some one's property, not in so far as it is wood[9]. It is plain, then, that in the cases mentioned substance is not relative. But with regard to some secondary substances there is a difference of opinion; thus, such terms as 'head' and 'hand' are defined with reference to that of which the things indicated are a part, and so it comes about that these appear to have a relative character. Indeed, if our definition of that which is relative was complete, it is very difficult, if not impossible, to prove that no substance is relative. If, however, our definition was not complete, if those things only are properly called relative in the case of which relation to an external object is a necessary condition of existence, perhaps some explanation of the dilemma may be found.

Categories: The former definition does indeed apply to all relatives, but the fact that a thing is explained with reference to something else does not make it essentially relative.

Categories: The qualities expressed by the terms 'triangular' and 'quadrangular' do not appear to admit of variation of degree, nor indeed do any that have to do with figure. For those things to which the definition of the triangle or circle is applicable are all equally triangular or circular. Those, on the other hand, to which the same definition is not applicable, cannot be said to differ from one another in degree; the square is no more a circle than the rectangle, for to neither is the definition of the circle appropriate. In short, if the definition of the term proposed is not applicable to both objects, they cannot be compared. Thus it is not all qualities which admit of variation of degree.

On The Generation Of Animals:

On The Generation Of Animals: There are four causes[10] underlying everything: first, the final cause, that for the sake of which a thing exists; secondly, the formal cause, the definition of its essence (and these two we may regard pretty much as one and the same); thirdly, the material; and fourthly, the moving principle or efficient cause.

On The Generation Of Animals: We have then already discussed the other three causes, for the definition and the final cause are the same, ~

On The Generation Of Animals: Again, as the first efficient or moving cause, to which belong the definition and the form,

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[9] He is not aware that he is using the term "wood" one as a name of a thing and the other the name of material.

[10] In the Phaedo, Socrates asserts what we learn in set theory—the unrefutable reason why a thing is a thing, because it is a member of a class that is constructed by a definition. Definition determines class membership. Or, in his words, participates.

Metaphysics

Metaphysics: After the systems we have named came the philosophy of Plato, which in most respects followed these thinkers, but had peculiarities that distinguished it from the philosophy of the Italians. For, having in his youth first become familiar with Cratylus and with the Heraclitean doctrines (that all sensible things are ever in a state of flux and there is no knowledge about them), these views he held even in later years. Socrates, however, was busying himself about ethical matters and neglecting the world of nature as a whole but seeking the universal in these ethical matters, and fixed thought for the first time on definitions; Plato accepted his teaching, but held that the problem applied not to sensible things but to entities of another kind—for this reason, that the common definition could not be a definition of any sensible thing, as they were always changing. Things of this other sort, then, he called Ideas, and sensible things, he said, were all named after these, and in virtue of a relation to these; for the many existed by participation in the Ideas that have the same name as they. Only the name 'participation' was new; for the Pythagoreans say that things exist by 'imitation' of numbers, and Plato says they exist by participation, changing the name. But what the participation or the imitation of the Forms could be they left an open question[11].

Metaphysics: But he agreed with the Pythagoreans in saying that the One is substance and not a predicate of something else; and in saying that the Numbers are the causes of the reality of other things he agreed with them; but positing a dyad and constructing the infinite out of great and small, instead of treating the infinite as one, is peculiar to him; and so is his view that the Numbers exist apart from sensible things, while they say that the things themselves are Numbers, and do not place the objects of mathematics between Forms and sensible things. His divergence from the Pythagoreans in making the One and the Numbers separate from things, and his introduction of the Forms, were due to his inquiries in the region of definitions (for the earlier thinkers had no tincture of dialectic), and his making the other entity besides the One a dyad was due to the belief that the numbers, except those which were prime, could be neatly produced out of the dyad as out of some plastic material. Yet what happens is the contrary; the theory is not a reasonable one. For they make many things out of the matter, and the form generates only once, but what we observe is that one table is made from one matter, while the man who applies the form, though he is one, makes many tables. And the relation of the male to the female is similar; for the latter is impregnated by one copulation, but the male impregnates many females; yet these are analogues of those first principles.

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[11] This and the next paragraph are very incriminating pieces of evidence that Aristotle did not understand Plato at all. What Plato saw very clearly, is that one has, from the abstractions that the body can abstract, material and form. Material is difference, form is not a difference—i.e. same. We group not by difference but by the same—lack of difference (form). Since you cannot divide a non-difference, the same form covers all individuals in a class. One can read by Aristotle's explanation he was unable to abstract and use the idea—this is why his dissertations are over embellished and contradictory—his mind was incapable of understanding—he had a very good memory, but very poor concepts. Most normal people it seems have been unable to make this abstraction—this is why one has claims that a line is composed of an infinite number of points—a ball bearing conception of a line. But then again, one can find passages which make it seem that he did understand Plato, however, the bulk of the work denies such a view.

Metaphysics: And how could we learn the elements of all things? Evidently we cannot start by knowing anything before. For as he who is learning geometry, though he may know other things before, knows none of the things with which the science deals and about which he is to learn, so is it in all other cases. Therefore if there is a science of all things, such as some assert to exist, he who is learning this will know nothing before. Yet all learning is by means of premises which are (either all or some of them) known before,—whether the learning be by demonstration or by definitions; for the elements of the definition must be known before and be familiar; and learning by induction proceeds similarly. But again, if the science were actually innate, it were strange that we are unaware of our possession of the greatest of sciences.

Metaphysics: But if there are several sciences of the causes, and a different science for each different principle, which of these sciences should be said to be that which we seek, or which of the people who possess them has the most scientific knowledge of the object in question? The same thing may have all the kinds of causes, e.g. the moving cause of a house is the art or the builder, the final cause is the function it fulfils, the matter is earth and stones, and **the form is the definition.** To judge from our previous discussion of the question which of the sciences should be called Wisdom, there is reason for applying the name to each of them. For inasmuch as it is most architectonic and authoritative and the other sciences, like slavewomen, may not even contradict it, the science of the end and of the good is of the nature of Wisdom (for the other things are for the sake of the end). But inasmuch as it was described as dealing with the first causes and that which is in the highest sense object of knowledge, the science of substance must be of the nature of Wisdom. For since men may know the same thing in many ways, we say that he who recognizes what a thing is by its being so and so knows more fully than he who recognizes it by its not being so and so, and in the former class itself one knows more fully than another, and he knows most fully who knows what a thing is, not he who knows its quantity or quality or what it can by nature do or have done to it. And further in all cases also we think that the knowledge of each even of the things of which demonstration is possible is present only when we know what the thing is, e.g. what squaring a rectangle is, viz. that it is the finding of a mean; and similarly in all other cases. And we know about becomings and actions and about every change when we know the source of the movement; and this is other than and opposed to the end. Therefore it would seem to belong to different sciences to investigate these causes severally.

Metaphysics: To judge from these arguments, then, the principles of things would not be the genera; but if we know each thing by its definition, and the genera are the principles or starting–points of definitions, the genera must also be the principles of definable things. And if to get the knowledge of the species according to which things are named is to get the knowledge of things, the genera are at least starting-points of the species. And some also of those who say unity or being, or the great and the small, are elements of things, seem to treat them as genera.

Metaphysics: But, again, it is not possible to describe the principles in both ways. For the formula of the essence is one; but definition by genera will be different from that which states the constituent parts of a thing.

Metaphysics: First then this at least is obviously true, that the word 'be' or 'not be' has a definite meaning, so that not everything will be 'so and not so'. Again, if 'man' has one

meaning, let this be 'two–footed animal'; by having one meaning I understand this:—if 'man' means 'X', then if A is a man 'X' will be what 'being a man' means for him. (It makes no difference even if one were to say a word has several meanings, if only they are limited in number; for to each definition there might be assigned a different word. For instance, we might say that 'man' has not one meaning but several, one of which would have one definition, viz. 'two–footed animal', while there might be also several other definitions if only they were limited in number; for a peculiar name might be assigned to each of the definitions. *If, however, they were not limited but one were to say that the word has an infinite number of meanings, obviously reasoning would be impossible*[12]*;* **for not to have one meaning is to have no meaning**, and if words have no meaning our reasoning with one another, and indeed with ourselves, has been annihilated; for it is impossible to think of anything if we do not think of one thing; but if this is possible, one name might be assigned to this thing.)

Metaphysics: Some people have acquired this opinion as other paradoxical opinions have been acquired; when men cannot refute eristical arguments, they give in to the argument and agree that the conclusion is true. This, then, is why some express this view; others do so because they demand a reason for everything. And the starting–point in dealing with all such people is definition. Now the definition rests on the necessity of their meaning something; for the form of words of which the word is a sign will be its definition.—While the doctrine of Heraclitus, that all things are and are not, seems to make everything true, that of Anaxagoras, that there is an intermediate between the terms of a contradiction, seems to make everything false; for when things are mixed, the mixture is neither good nor not–good, so that one cannot say anything that is true.

Metaphysics: (2) People also transfer the word 'element' from this meaning and apply it to that which, being one and small, is useful for many purposes; for which reason what is small and simple and indivisible is called an element. Hence come the facts that the most universal things are elements (because each of them being one and simple is present in a plurality of things, either in all or in as many as possible), and that unity and the point are thought by some to be first principles. Now, since the so-called genera are universal and indivisible (for there is no definition of them), some say the genera are elements, and more so than the differentia, because the genus is more universal; for where the differentia is present, the genus accompanies it, but where the genus is present, the differentia is not always so. It is common to all the meanings that the element of each thing is the first component immanent in each.

Metaphysics: *Clearly, then, only substance is definable*[13]. For if the other categories also are definable, it must be by addition of a determinant, e.g. the qualitative is defined thus,

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[12] And it follows also, that the more so called meanings a particular word has, the more difficult it becomes to use the word for reasoning. The more conventional a word becomes the more it can perform its function as a word. Contrast this to those fools who call the change in usage and designation of words "the growth of language"—does it demonstrate one wit of thought?

[13] Metaphysics: We have now outlined the nature of substance, showing that it is that which is not predicated of a stratum, but of which all else is predicated.

I simply say "a thing." But although he will state several times that substance is simply some thing, by how he defines it, he will from time to time contradict himself—for he will define substance as a thing one time, and then use the phrase "substance of a thing."

and so is the odd, for it cannot be defined apart from number; nor can female be defined apart from animal. (When I say 'by addition' I mean the expressions in which it turns out that we are saying the same thing twice, as in these instances.) And if this is true, coupled terms also, like 'odd number', will not be definable (but this escapes our notice because our formulae are not accurate.). But if these also are definable, either it is in some other way or, as we definition and essence must be said to have more than one sense. Therefore in one sense nothing will have a definition and nothing will have an essence, except substances, but in another sense other things will have them. Clearly, then, definition is the formula of the essence, and essence belongs to substances either alone or chiefly and primarily and in the unqualified sense.

Metaphysics: Since a definition is a formula, and every formula has parts, and as the formula is to the thing, so is the part of the formula to the part of the thing, the question is already being asked whether the formula of the parts must be present in the formula of the whole or not. For in some cases the formulae of the parts are seen to be present, and in some not. The formula of the circle does not include that of the segments, but that of the syllable includes that of the letters; yet the circle is divided into segments as the syllable is into letters.—And further if the parts are prior to the whole, and the acute angle is a part of the right angle and the finger a part of the animal, the acute angle will be prior to the right angle and finger to the man. But the latter are thought to be prior; for in formula the parts are explained by reference to them, and in respect also of the power of existing apart from each other the wholes are prior to the parts.

Metaphysics: The truth has indeed now been stated, but still let us state it yet more clearly, taking up the question again. The parts of the formula, into which the formula is divided, are prior to it, either all or some of them. The formula of the right angle, however, does not include the formula of the acute, but the formula of the acute includes that of the right angle; for he who defines the acute uses the right angle; for the acute is 'less than a right angle'. The circle and the semicircle also are in a like relation; for the semicircle is defined by the circle; and so is the finger by the whole body, for a finger is 'such and such a part of a man'. Therefore the parts which are of the nature of matter, and into which as its matter a thing is divided, are posterior; but those which are of the nature of parts of the formula, and of the substance according to its formula, are prior, either all or some of them. And since the soul of animals (for this is the substance of a living being) is their substance according to the formula, i.e. the form and the essence of a body of a certain kind (at least we shall define each part, if we define it well, not without reference to its function, and this cannot belong to it without perception), so that the parts of soul are prior, either all or some of them, to the concrete 'animal', and so too with each individual animal; and the body and parts are posterior to this, the essential substance, and it is not the substance but the concrete thing that is divided into these parts as its matter:—this being so, to the concrete thing these are in a sense prior, but in a sense they are not. For they cannot even exist if severed from the whole; for it is not a finger in any and every state that is the finger of a living thing, but a dead finger is a finger only in name. Some parts are neither prior nor posterior to the whole, i.e. those which are dominant and in which the formula, i.e. the essential substance, is immediately present, e.g. perhaps the heart or the brain; for it does not matter in the least which of the two has this quality. But man and horse and terms which are thus applied to individuals, but universally, are not substance but something

composed of this particular formula and this particular matter treated as universal; and as regards the individual, Socrates already includes in him ultimate individual matter; and similarly in all other cases. **'A part' may be a part either of the form (i.e. of the essence), or of the compound of the form and the matter, or of the matter itself.**[14] But only the parts of the form are parts of the formula, and the formula is of the universal; for 'being a circle' is the same as the circle, and 'being a soul' the same as the soul[15]. But when we come to the concrete thing, e.g. this circle, i.e. one of the individual circles, whether perceptible or intelligible (I mean by intelligible circles the mathematical, and by perceptible circles those of bronze and of wood),—of these there is no definition, but they are known by the aid of intuitive thinking or of perception; and when they pass out of this complete realization it is not clear whether they exist or not; but they are always stated and recognized by means of the universal formula. But matter is unknowable in itself. And some matter is perceptible and some intelligible, perceptible matter being for instance bronze and wood and all matter that is changeable, and intelligible matter being that which is present in perceptible things not *quâ* perceptible, i.e. the objects of mathematics.

Metaphysics: Another question is naturally raised, viz. what sort of parts belong to the form and what sort not to the form[16], but to the concrete thing. Yet if this is not plain it is not possible to define any thing; for definition is of the universal and of the form[17]. If then it is not evident what sort of parts are of the nature of matter and what sort are not, neither will the formula of the thing be evident. In the case of things which are found to occur in specifically different materials, as a circle may exist in bronze or stone or wood[18], it seems plain that these, the bronze or the stone, are no part of the essence of the circle, since it is found apart from them. Of things which are not seen to exist apart, there is no reason why the same may not be true, just as if all circles that had ever been seen were of bronze; for none the less the bronze would be no part of the form; but it is hard to eliminate it in thought. E.g. the form of man is always found in flesh and bones and parts of this kind; are these then also parts of the form and the formula? No, they are matter; but because man is not found also in other matters we are unable to perform the abstraction.

Metaphysics: We have pointed out, then, that the question of definitions contains some difficulty, and why this is so. And so to reduce all things thus to Forms and to eliminate the

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[14] I hope this was translated wrong, let me try to fix it: 'A part' may be either the form (i.e. the essence), or of the compound of the form and the matter, or the matter itself.

In other words, there are two ways of thinking of part. A things form, or its matter, or what is normally thought of, dividing the thing up into smaller things. However, one cannot divide the form (divide the divisor), or divide the matter (half of wood is still wood), but one can divide a thing into smaller things. Now, we know that a body acquisition system abstracts form or material, but, in the words of philosophy "We can never know the thing in itself." Therefore, one has . . . . . etc.

[15] Again, Aristotle demonstrates that he don't quite understand. To say the least, the ideas are just beyond his comprehension.

[16] This Aristotle would ask, not understanding that one cannot divide the divisor, part the part, or in Euclid "The point (part) is that which has no part. It is not the boundary that is bounded, it is not the cut that is cut, it is not the form that is formed. But Aristotle cannot quite grasp it.

[17] He did not comprehend Plato, when Plato said, that the first elements, form and matter can only be named. Things are defined in terms of form and matter, form and matter must be abstracted.

[18] Another mistake: is the form in the material or is the material in the form?

matter is useless labour; for some things surely are a particular form in a particular matter, or particular things in a particular state. And the comparison which Socrates the younger used to make in the case of 'animal' is not sound; for it leads away from the truth, and makes one suppose that man can possibly exist without his parts, as the circle can without the bronze. But the case is not similar; for an animal is something perceptible, and it is not possible to define it without reference to movement[19]—nor, therefore, without reference to the parts' being in a certain state. For it is not a hand in any and every state that is a part of man, but only when it can fulfil its work, and therefore only when it is alive; if it is not alive it is not a part.

Metaphysics: Whether there is, apart from the matter of such substances, another kind of matter, and one should look for some substance other than these, e.g. numbers[20] or something of the sort, must be considered later. For it is for the sake of this that we are trying to determine the nature of perceptible substances as well, since in a sense the inquiry about perceptible substances is the work of physics, i.e. of second philosophy; for the physicist must come to know not only about the matter, but also about the substance expressed in the formula, and even more than about the other. And in the case of definitions, how the elements in the formula are parts of the definition, and why the definition is one formula (for clearly the thing is one, but in virtue of what is the thing one, although it has parts?),—this must be considered later.

Metaphysics: Now let us treat first of definition, in so far as we have not treated of it in the Analytics; for the problem stated in them is useful for our inquiries concerning substance. I mean this problem:—wherein can consist the unity of that, the formula of which we call a definition, as for instance, in the case of man, 'two–footed animal'; for let this be the formula of man. Why, then, is this one, and not many, viz. 'animal' and 'two–footed'? For in the case of 'man' and 'pale' there is a plurality when one term does not belong to the other, but a unity when it does belong and the subject, man, has a certain attribute[21]; for then a unity is produced and we have 'the pale man'. In the present case, on the other hand, one does not share in the other; the genus is not thought to share in its differentiæ (for then the same thing would share in contraries; for the differentiæ by which the genus is divided are contrary). And even if the genus does share in them, the same argument applies, since the differentiæ present in man are many, e.g. endowed with feet, two–footed, featherless. Why are these one and not many? Not because they are present in one thing; for on this principle a unity can be made out of all the attributes of a thing. But surely all the attributes in the definition must be one; for the definition is a single formula and a formula of substance, so that it must be a formula of some one thing; for substance means a 'one' and a 'this', as we maintain.

Metaphysics: We must first inquire about definitions reached by the method of divisions. There is nothing in the definition except the first–named and the differentiæ. The other

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[19] Here again, Plato addressed this also, is the difference between things part of one or the other thing?

[20] Numbers are no more than names generated by using an ordered naming convention, but even at this time in history, what a number *is* is generally a mystery.

[21] Aristotle has taken the wrong path. Once one knows the structure of unit sentences, one must then determine how these units are added together, just like in arithmetic. Only when one fully understands the unit, can one then start to count.

genera are the first genus and along with this the differentiæ that are taken with it, e.g. the first may be 'animal', the next 'animal which is two–footed', and again 'animal which is two–footed and featherless', and similarly if the definition includes more terms. And in general it makes no difference whether it includes many or few terms,—nor, therefore, whether it includes few or simply two; and of the two the one is differentia and the other genus; e.g. in 'two–footed animal' 'animal' is genus, and the other is differentia.

Metaphysics: If then the genus absolutely does not exist apart from the species–of–a–genus, or if it exists but exists as matter (for the voice is genus and matter, but its differentiæ make the species, i.e. the letters, out of it), clearly the definition is the formula which comprises the differentiæ.

Metaphysics: But it is also necessary that the division be by the differentia of the differentia[22]; e.g. 'endowed with feet' is a differentia of 'animal'; again the differentia of 'animal endowed with feet' must be of it *quâ* endowed with feet. Therefore we must not say, if we are to speak rightly, that of that which is endowed with feet one part has feathers and one is featherless (if we do this we do it through incapacity); we must divide it only into cloven–footed and not cloven; for these are differentiæ in the foot; cloven–footedness is a form of footedness. And the process wants always to go on so till it reaches the species that contain no differences. And then there will be as many kinds of foot as there are differentiæ, and the kinds of animals endowed with feet will be equal in number to the differentiæ. If then this is so, clearly the last differentia will be the substance of the thing and its definition, since it is not right to state the same things more than once in our definitions; for it is superfluous. And this does happen; for when we say 'animal endowed with feet and two–footed' we have said nothing other than 'animal having feet, having two feet'; and if we divide this by the proper division, we shall be saying the same thing more than once—as many times as there are differentiæ.

Metaphysics: If then a differentia of a differentia be taken at each step, one differentia—the last—will be the form and the substance; but if we divide according to accidental qualities, e.g. if we were to divide that which is endowed with feet into the white and the black, there will be as many differentiæ as there are cuts. Therefore it is plain that the definition is the formula which contains the differentiæ, or, according to the right method, the last of these. This would be evident, if we were to change the order of such definitions, e.g. of that of man, saying 'animal which is two–footed and endowed with feet'; for 'endowed with feet' is superfluous when 'two–footed' has been said. But there is no order in the substance; for how are we to think the one element posterior and the other prior? Regarding the definitions, then, which are reached by the method of divisions, let this suffice as our first attempt at stating their nature.

Metaphysics: The conclusion is evident also from the following consideration. A substance cannot consist of substances present in it in complete reality; for things that are thus in complete reality two are never in complete reality one, though if they are potentially two, they can be one (e.g. the double line consists of two halves—potentially; for the

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[22] This amounts to the set of a set which blew away Whitehead and Russell. Aristotle steps into it completely unaware of a contradiction. Is a thing abstracted from a thing? Is form abstracted from form? Is material abstracted from form? etc., This was why Plato gave Parmenides exercise for learning the principles of predication.

complete realization of the halves divides them from one another); therefore if the substance is one, it will not consist of substances present in it and present in this way, which Democritus describes rightly; he says one thing cannot be made out of two nor two out of one; for he identifies substances with his indivisible magnitudes. It is clear therefore that the same will hold good of number, if number is a synthesis of units, as is said by some; for two is either not one, or there is no unit present in it in complete reality. But our result involves a difficulty. If no substance can consist of universals because a universal indicates a 'such', not a 'this', and if no substance can be composed of substances existing in complete reality, every substance would be incomposite, so that there would not even be a formula of any substance. But it is thought by all and was stated long ago that it is either only, or primarily, substance that can defined; yet now it seems that not even substance can. There cannot, then, be a definition of anything; or in a sense there can be, and in a sense there cannot. And what we are saying will be plainer from what follows.

Metaphysics: Since substance is of two kinds, the concrete thing and the formula (I mean that one kind of substance is the formula taken with the matter, while another kind is the formula in its generality), substances in the former sense are capable of destruction (for they are capable also of generation), but there is no destruction of the formula in the sense that it is ever in course of being destroyed (for there is no generation of it either; the being of house is not generated, but only the being of this house), but without generation and destruction formulae are and are not; for it has been shown that no one begets nor makes these. For this reason, also, there is neither definition of nor demonstration about sensible individual substances, because they have matter whose nature is such that they are capable both of being and of not being; for which reason all the individual instances of them are destructible. If then demonstration is of necessary truths and definition is a scientific process, and if, just as knowledge cannot be sometimes knowledge and sometimes ignorance, but the state which varies thus is opinion, so too demonstration and definition cannot vary thus, but it is opinion that deals with that which can be otherwise than as it is, clearly there can neither be definition of nor demonstration about sensible individuals. For perishing things are obscure to those who have the relevant knowledge, when they have passed from our perception; and though the formulae remain in the soul unchanged, there will no longer be either definition or demonstration. And so when one of the definition—mongers defines any individual, he must recognize that his definition may always be overthrown; for it is not possible to define such things.

Metaphysics: As has been said, then, the impossibility of defining individuals escapes notice in the case of eternal things, especially those which are unique, like the sun or the moon. For people err not only by adding attributes whose removal the sun would survive, e.g. 'going round the earth' or 'night–hidden' (for from their view it follows that if it stands still or is visible, it will no longer be the sun; but it is strange if this is so; for 'the sun' means a certain substance); but also by the mention of attributes which can belong to another subject; e.g. if another thing with the stated attributes comes into existence, clearly it will be a sun; the formula therefore is general. But the sun was supposed to be an individual, like Cleon or Socrates. After all, why does not one of the supporters of the Ideas

produce a definition of an Idea[23]? It would become clear, if they tried, that what has now been said is true.

Metaphysics: WE must reckon up the results arising from what has been said, and compute the sum of them, and put the finishing touch to our inquiry. We have said that the causes, principles, and elements of substances are the object of our search. And some substances are recognized by every one, but some have been advocated by particular schools. Those generally recognized are the natural substances, i.e. fire, earth, water, air, &c., the simple bodies; second plants and their parts, and animals and the parts of animals; and finally the physical universe and its parts; while some particular schools say that Forms and the objects of mathematics are substances. But there are arguments which lead to the conclusion that there are other substances, the essence and the substratum. Again, in another way the genus seems more substantial than the various species, and the universal than the particulars. And with the universal and the genus the Ideas are connected; it is in virtue of the same argument that they are thought to be substances. And since the essence is substance, and the definition is a formula of the essence, for this reason we have discussed definition and essential predication. Since the definition is a formula, and a formula has parts, we had to consider also with respect to the notion of 'part', what are parts of the substance and what are not, and whether the parts of the substance are also parts of the definition. Further, too, neither the universal nor the genus is a substance; we must inquire later into the Ideas and the objects of mathematics; for some say these are substances as well as the sensible substances.

Metaphysics: Since the substance which exists as underlying and as matter is generally recognized, and this that which exists potentially, it remains for us to say what is the substance, in the sense of actuality, of sensible things. Democritus seems to think there are three kinds of difference between things; the underlying body, the matter, is one and the same, but they differ either in rhythm, i.e. shape, or in turning, i.e. position, or in inter–contact, i.e. order. But evidently there are many differences; for instance, some things are characterized by the mode of composition of their matter, e.g. the things formed by blending, such as honey–water; and others by being bound together, e.g. bundle; and others by being glued together, e.g. a book; and others by being nailed together, e.g. a casket; and others in more than one of these ways; and others by position, e.g. threshold and lintel (for these differ by being placed in a certain way); and others by time, e.g. dinner and breakfast; and others by place, e.g. the winds; and others by the affections proper to sensible things, e.g. hardness and softness, density and rarity, dryness and wetness; and some things by some of these qualities, others by them all, and in general some by excess and some by defect. Clearly, then, the word 'is' has just as many meanings; a thing is a threshold because it lies in such and such a position, and its being means its lying in that position, while being ice means having been solidified in such and such a way. And the being of some things will be defined by all these qualities, because some parts of them are mixed, others are blended, others are bound together, others are solidified, and others use the other differentiæ; e.g. the hand or the foot requires such complex definition. We must grasp, then, the kinds of differentiæ (for these will be the principles of the being of things), e.g. the things characterized by the more and the less, or by the dense and the rare, and by

[23] His challenge amounts to an idea of an idea. Self-referential.

other such qualities; for all these are forms of excess and defect. And anything that is characterized by shape or by smoothness and roughness is characterized by the straight and the curved. And for other things their being will mean their being mixed, and their not being will mean the opposite.

Metaphysics: It is clear, then, from these facts that, since its substance is the cause of each thing's being, we must seek in these differentiæ what is the cause of the being of each of these things. Now none of these differentiæ is substance, even when coupled with matter, yet it is what is analogous to substance in each case; and as in substances that which is predicated of the matter is the actuality itself, in all other definitions also it is what most resembles full actuality. E.g. if we had to define a threshold, we should say 'wood or stone in such and such a position', and a house we should define as 'bricks and timbers in such and such a position',(or a purpose may exist as well in some cases), and if we had to define ice we should say 'water frozen or solidified in such and such a way', and harmony is 'such and such a blending of high and low'; and similarly in all other cases.

Metaphysics: Obviously, then, the actuality or the formula is different when the matter is different; for in some cases it is the composition, in others the mixing, and in others some other of the attributes we have named. And so, of the people who go in for defining, those who define a house as stones, bricks, and timbers are speaking of the potential house, for these are the matter; but those who propose 'a receptacle to shelter chattels and living beings', or something of the sort, speak of the actuality. Those who combine both of these speak of the third kind of substance, which is composed of matter and form (for the formula that gives the differentiæ seems to be an account of the form or actuality, while that which gives the components is rather an account of the matter); and the same is true of the kind of definitions which Archytas used to accept; they are accounts of the combined form and matter. E.g. what is still weather? Absence of motion in a large expanse of air; air is the matter, and absence of motion is the actuality and substance. What is a calm? Smoothness of sea; the material substratum is the sea, and the actuality or shape is smoothness. It is obvious then, from what has been said, what sensible substance is and how it exists—one kind of it as matter, another as form or actuality, while the third kind is that which is composed of these two.

Metaphysics: Therefore the difficulty which used to be raised by the school of Antisthenes and other such uneducated people has a certain timeliness. They said that the 'what' cannot be defined (for the definition so called is a 'long rigmarole') but of what sort a thing, e.g. silver, is, they thought it possible actually to explain, not saying what it is, but that it is like tin. **Therefore one kind of substance can be defined and formulated, i.e. the composite kind, whether it be perceptible or intelligible; but the primary parts of which this consists cannot be defined, since a definitory formula predicates something of something, and one part of the definition must play the part of matter and the other that of form.**[24]

Metaphysics: It is also obvious that, if substances are in a sense numbers, they are so in this sense and not, as some say, as numbers of units. For a definition is a sort of

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[24] I.e. A thing is some difference, some material in some form. Or one can say, if one can apply a boundary then it is a material, such as space. Aristotle did not take this as the foundation. He did not comprehend it. I think a great deal of confusion is that this statement does not say which form of a thing.

number; for (1) it is divisible, and into indivisible parts (for definitory formulae are not infinite), and number also is of this nature. And (2) as, when one of the parts of which a number consists has been taken from or added to the number, it is no longer the same number, but a different one, even if it is the very smallest part that has been taken away or added, so the definition and the essence will no longer remain when anything has been taken away or added. And (3) the number must be something in virtue of which it is one, and this these thinkers cannot state, what makes it one, if it is one (for either it is not one but a sort of heap, or if it is, we ought to say what it is that makes one out of many); and the definition is one, but similarly they cannot say what makes it one. And this is a natural result; for the same reason is applicable, and substance is one in the sense which we have explained, and not, as some say, by being a sort of unit or point; each is a complete reality and a definite nature. **And (4) as number does not admit of the more and the less, neither does substance, in the sense of form, but if any substance does, it is only the substance which involves matter[25].** Let this, then, suffice for an account of the generation and destruction of so-called substances in what sense it is possible and in what sense impossible—and of the reduction of things to number.

Metaphysics: To return to the difficulty which has been stated with respect both to definitions and to numbers, what is the cause of their unity? In the case of all things which have several parts and in which the totality is not, as it were, a mere heap, but the whole is something beside the parts, there is a cause; for even in bodies contact is the cause of unity in some cases, and in others viscosity or some other such quality. And a definition is a set of words which is one not by being connected together, like the Iliad, but by dealing with one object.—What then, is it that makes man one; why is he one and not many, e.g. animal biped, especially if there are, as some say, an animal—itself and a biped—itself? Why are not those Forms themselves the man, so that men would exist by participation not in man, nor in one Form, but in two, animal and biped, and in general man would be not one but more than one thing, animal and biped?

Metaphysics: **Clearly, then, if people proceed thus in their usual manner of definition and speech, they cannot explain and solve the difficulty. But if, as we say, one element is matter and another is form, and one is potentially and the other actually, the question will no longer be thought a difficulty.** For this difficulty is the same as would arise if 'round bronze' were the definition of 'cloak'; for this word would be a sign of the definitory formula, so that the question is, what is the cause of the unity of 'round' and 'bronze'? **The difficulty disappears, because the one is matter, the other form[26].** What, then, causes this—that which was potentially to be actually—except, in the case of things which are generated, the agent? For there is no other cause of the potential sphere's becoming actually a sphere, but this was the essence of either. Of matter some is intelligible, some perceptible, and in a formula there is always an element of matter as well

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[25] He will call both form and matter substance and he will also call them elements. This use of the term elements was used by both Plato and Euclid to mean the same thing, form and matter—yet, whenever one hears a discourse on what the ancients thought that the elements were, this use I don't recall ever being mentioned, yet it is the foundation of grammar, not even taught today.

[26] Now he appears to be lucid, but why introduce the terms potentiality and actuality?

as one of actuality[27]; e.g. the circle is 'a plane figure'. But of the things which have no matter, either intelligible or perceptible, each is by its nature essentially a kind of unity, as it is essentially a kind of being—individual substance, quality, or quantity (and so neither 'existent' nor 'one' is present in their definitions), and the essence of each of them is by its very nature a kind of unity as it is a kind of being—and so none of these has any reason outside itself, for being one, nor for being a kind of being; for each is by its nature a kind of being and a kind of unity, not as being in the genus 'being' or 'one' nor in the sense that being and unity can exist apart from particulars[28].

Metaphysics: Since we have treated of the kind of potency which is related to movement, let us discuss actuality—what, and what kind of thing, actuality is. For in the course of our analysis it will also become clear, with regard to the potential, that we not only ascribe potency to that whose nature it is to move something else, or to be moved by something else, either without qualification or in some particular way, but also use the word in another sense, which is the reason of the inquiry in the course of which we have discussed these previous senses also. Actuality, then, is the existence of a thing not in the way which we express by 'potentially'; we say that potentially, for instance, a statue of Hermes[29] is in the block of wood and the half–line is in the whole, because it might be separated out, and we call even the man who is not studying a man of science, if he is capable of studying; the thing that stands in contrast to each of these exists actually. Our meaning can be seen in the particular cases by induction, and we must not seek a definition of everything but be content to grasp the analogy, that it is as that which is building is to that which is capable of building, and the waking to the sleeping, and that which is seeing to that which has its eyes shut but has sight, and that which has been shaped out of the matter to the matter, and that which has been wrought up to the unwrought. Let actuality be defined by one member of this antithesis, and the potential by the other. But all things are not said in the same sense to exist actually, but only by analogy—as A is in B or to B, C is in D or to D; for some are as movement to potency, and the others as substance to some sort of matter.

Metaphysics: The one and the many are opposed in several ways, of which one is the opposition of the one and plurality as indivisible and divisible; for that which is either divided or divisible is called a plurality, and that which is indivisible or not divided is called one. Now since opposition is of four kinds, and one of these two terms is privative in meaning, they must be contraries, and neither contradictory nor correlative in meaning. And the one derives its name and its explanation from its contrary, the indivisible from the divisible, because plurality and the divisible is more perceptible than the indivisible, so that in definition plurality is prior to the indivisible[30], because of the conditions of perception.

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[27] I.e. matter and form—but why the synonym switching? To hide the fact that this is exactly Plato's stance? He will then become sidetracked as to how the form is applied to the material, which is rather fruitless as the crafts have countless ways of performing that task.

[28] Somehow he could not bring himself to say that form and material are the "parts" of a thing, each of which, in of itself is not a thing. This amounts to, everything is composed of nothing.

[29] Instead of saying that the block of wood is the material, and the form of such and such is applied to it, he has to go off on a half baked discussion using his particular chosen words. It is clear that Aristotle was not a straight forward talker. This probably aggravated Plato to no end.

[30] Another major blunder. Can one predicate of a first principle, form or matter? Second, since form and matter cannot be separated, how can one be prior?

Metaphysics: To the one belong, as we indicated graphically in our distinction of the contraries, the same and the like and the equal, and to plurality belong the other and the unlike and the unequal. 'The same' has several meanings[31]; (1) we sometimes mean 'the same numerically'; again, (2) we call a thing the same if it is one both in definition and in number, e.g. you are one with yourself both in form and in matter; and again, (3) if the definition of its primary essence is one; e.g. equal straight lines are the same, and so are equal and equal–angled quadrilaterals; there are many such, but in these equality constitutes unity.

Metaphysics: But since every pair of contraries falls to be examined by one and the same science, and in each pair one term is the privative of the other though one might regarding some contraries raise the question, how they can be privately related, viz. those which have an intermediate, e.g. unjust and just—in all such cases one must maintain that the privation is not of the whole definition, but of the infima species, if the just man is 'by virtue of some permanent disposition obedient to the laws', the unjust man will not in every case have the whole definition denied of him, but may be merely 'in some respect deficient in obedience to the laws', and in this respect the privation will attach to him[32]; and similarly in all other cases.

Metaphysics: (b) Again, the elements will not be even knowable; for they are not universal, and knowledge is of universals. This is clear from demonstrations and from definitions; for we do not conclude that this triangle has its angles equal to two right angles, unless every triangle has its angles equal to two right angles, nor that this man is an animal, unless every man is an animal.

On The Parts Of Animals

On The Parts Of Animals: Some writers propose to reach the definitions of the ultimate forms of animal life by bipartite division. But this method is often difficult, and often impracticable.

Physics

Physics: Plainly then, if there are conditions and principles which constitute natural objects and from which they primarily are or have come to be-have come to be, I mean, what each is said to be in its essential nature, not what each is in respect of a concomitant attribute-plainly, I say, everything comes to be from both subject and form[33]. For 'musical man' is composed (in a way) of 'man' and 'musical': you can analyse it into the definitions of its elements. It is clear then that what comes to be will come to be from these elements.

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[31] Does it have several meanings? Really, or has countless applications? He must have drove all the philosophers crazy.

[32] Here again, container and contained error. Does the definition determine class membership, or does the member contain the definition?

[33] Now one might think that he has made a synonym for matter with subject, however, he has just made matter and form the elements of a thing, and a thing an element also! Plato must have thought him hopelessly stupid.

Physics: The matter comes to be and ceases to be in one sense[34], while in another it does not. As that which contains the privation, it ceases to be in its own nature, for what ceases to be-the privation-is contained within it. But as potentiality it does not cease to be in its own nature, but is necessarily outside the sphere of becoming and ceasing to be. For if it came to be, something must have existed as a primary substratum from which it should come and which should persist in it; but this is its own special nature, so that it will be before coming to be. (For my definition of matter[35] is just this-the primary substratum of each thing, from which it comes to be without qualification, and which persists in the result.) And if it ceases to be it will pass into that at the last, so it will have ceased to be before ceasing to be.

Physics: Another account is that 'nature' is the shape or form which is specified in the definition of the thing[36].

Physics: For the word 'nature' is applied to what is according to nature and the natural in the same way as 'art' is applied to what is artistic or a work of art. We should not say in the latter case that there is anything artistic about a thing, if it is a bed only potentially, not yet having the form of a bed; nor should we call it a work of art. The same is true of natural compounds. What is potentially flesh or bone has not yet its own 'nature'[37], and does not exist until it receives the form specified in the definition, which we name in defining what flesh or bone is. Thus in the second sense of 'nature' it would be the shape or form (not separable except in statement) of things which have in themselves a source of motion. (The combination of the two, e.g. man, is not 'nature' but 'by nature' or 'natural'.)

Physics: The necessary in nature, then, is plainly what we call by the name of matter, and the changes in it. Both causes must be stated by the physicist, but especially the end; for that is the cause of the matter, not vice versa; and the end is 'that for the sake of which', and the beginning starts from the definition or essence; as in artificial products, since a house is of such-and-such a kind, certain things must necessarily come to be or be there already, or since health is this, these things must necessarily come to be or be there already. Similarly if man is this, then these; if these, then those. Perhaps the necessary is present also in the definition. For if one defines the operation of sawing as being a certain kind of dividing, then this cannot come about unless the saw has teeth of a certain kind; and these cannot be unless it is of iron. For in the definition too there are some parts that are, as it were, its matter.

On The Soul

On The Soul: We must consider also whether soul is divisible or is without parts, and whether it is everywhere homogeneous or not; and if not homogeneous, whether its various forms are different specifically or generically: up to the present time those who have

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[34] Now we see an very sharp distinction in intellect, Plato rightly said that one cannot predicate existence or non-existence to these elements, and he was right. Apparently, the reason was over Aristotle's head.

[35] If a definition must state both form and matter, oh by George, how then can you define matter? I begin to believe that Aristotle did not attend Plato's Academy, that it was a myth.

[36] Now he is providing a synonym for form—nature. Wonderful.

[37] Now he is going to use "nature" to mean material. More than wonderful.

discussed and investigated soul seem to have confined themselves to the human soul. We must be careful not to ignore the question whether soul can be defined in a single unambiguous formula, as is the case with animal, or whether we must not give a separate formula for each of it, as we do for horse, dog, man, god (in the latter case the 'universal' animal-and so too every other 'common predicate'-being treated either as nothing at all or as a later product). Further, if what exists is not a plurality of souls, but a plurality of parts of one soul, which ought we to investigate first, the whole soul or its parts? (It is also a difficult problem to decide which of these parts are in nature distinct from one another.) Again, which ought we to investigate first, these parts or their functions, mind or thinking, the faculty or the act of sensation, and so on? If the investigation of the functions precedes that of the parts, the further question suggests itself: ought we not before either to consider the correlative objects, e.g. of sense or thought? It seems not only useful for the discovery of the causes of the derived properties of substances to be acquainted with the essential nature of those substances (as in mathematics it is useful for the understanding of the property of the equality of the interior angles of a triangle to two right angles to know the essential nature of the straight and the curved or of the line and the plane) but also conversely, for the knowledge of the essential nature of a substance is largely promoted by an acquaintance with its properties: for, when we are able to give an account conformable to experience of all or most of the properties of a substance, we shall be in the most favourable position to say something worth saying about the essential nature of that subject; in all demonstration a definition of the essence is required as a starting-point, so that definitions which do not enable us to discover the derived properties, or which fail to facilitate even a conjecture about them, must obviously, one and all, be dialectical and futile.

On The Soul: Since what is clear or logically more evident emerges from what in itself is confused but more observable by us, we must reconsider our results from this point of view. For it is not enough for a definitive formula to express as most now do the mere fact; it must include and exhibit the ground also. At present definitions are given in a form analogous to the conclusion of a syllogism; e.g. What is squaring? The construction of an equilateral rectangle equal to a given oblong rectangle. Such a definition is in form equivalent to a conclusion. One that tells us that squaring is the discovery of a line which is a mean proportional between the two unequal sides of the given rectangle discloses the ground of what is defined.

On The Soul: Assertion is the saying of something concerning something, e.g. affirmation, and is in every case either true or false: this is not always the case with mind: the thinking of the definition in the sense of the constitutive essence is never in error nor is it the assertion of something concerning something, but, just as while the seeing of the special object of sight can never be in error, the belief that the white object seen is a man may be mistaken, so too in the case of objects which are without matter.

Topics

Topics: We must now say what are ‘definition’, ‘property’, ‘genus’, and ‘accident’. A ‘definition’ is a phrase signifying a thing’s essence. It is rendered in the form either of a phrase in lieu of a term, or of a phrase in lieu of another phrase; for it is sometimes

possible to define the meaning of a phrase as well. People whose rendering consists of a term only, try it as they may, clearly do not render the definition of the thing in question, because a definition is always a phrase of a certain kind. One may, however, use the word 'definitory' also of such a remark as 'The "becoming" is "beautiful"', and likewise also of the question, 'Are sensation and knowledge the same or different?', for argument about definitions is mostly concerned with questions of sameness and difference. In a word we may call 'definitory' everything that falls under the same branch of inquiry as definitions; and that all the above—mentioned examples are of this character is clear on the face of them. For if we are able to argue that two things are the same or are different, we shall be well supplied by the same turn of argument with lines of attack upon their definitions as well: for when we have shown that they are not the same we shall have demolished the definition. Observe, please, that the converse of this last statement does not hold: for to show that they are the same is not enough to establish a definition. To show, however, that they are not the same is enough of itself to overthrow it.

Topics: An 'accident' is (i) something which, though it is none of the foregoing—i.e. neither a definition nor a property nor a genus yet belongs to the thing: (something which may possibly either belong or not belong to any one and the self-same thing, as (e.g.) the 'sitting posture' may belong or not belong to some self-same thing. Likewise also 'whiteness', for there is nothing to prevent the same thing being at one time white, and at another not white. Of the definitions of accident the second is the better: for if he adopts the first, any one is bound, if he is to understand it, to know already what 'definition' and 'genus' and 'property' are, whereas the second is sufficient of itself to tell us the essential meaning of the term in question. To Accident are to be attached also all comparisons of things together, when expressed in language that is drawn in any kind of way from what happens (accidit) to be true of them; such as, for example, the question, 'Is the honourable or the expedient preferable?' and 'Is the life of virtue or the life of self-indulgence the pleasanter?', and any other problem which may happen to be phrased in terms like these. For in all such cases the question is 'to which of the two does the predicate in question happen (accidit) to belong more closely?' It is clear on the face of it that there is nothing to prevent an accident from becoming a temporary or relative property. Thus the sitting posture is an accident, but will be a temporary property, whenever a man is the only person sitting, while if he be not the only one sitting, it is still a property relatively to those who are not sitting. So then, there is nothing to prevent an accident from becoming both a relative and a temporary property; but a property absolutely it will never be.

Topics: We must not fail to observe that all remarks made in criticism of a 'property' and 'genus' and 'accident' will be applicable to 'definitions' as well. For when we have shown that the attribute in question fails to belong only to the term defined, as we do also in the case of a property, or that the genus rendered in the definition is not the true genus, or that any of the things mentioned in the phrase used does not belong, as would be remarked also in the case of an accident, we shall have demolished the definition; so that, to use the phrase previously employed,' all the points we have enumerated might in a certain sense be called 'definitory'. But we must not on this account expect to find a single line of inquiry which will apply universally to them all: for this is not an easy thing to find, and, even were one found, it would be very obscure indeed, and of little service for the treatise before us. Rather, a special plan of inquiry must be laid down for each of the classes we have

distinguished, and then, starting from the rules that are appropriate in each case, it will probably be easier to make our way right through the task before us. So then, as was said before,' we must outline a division of our subject, and other questions we must relegate each to the particular branch to which it most naturally belongs, speaking of them as 'definitory' and 'generic' questions. The questions I mean have practically been already assigned to their several branches.

Topics: First of all we must define the number of senses borne by the term 'Sameness'. Sameness would be generally regarded as falling, roughly speaking, into three divisions. We generally apply the term numerically or specifically or generically—numerically in cases where there is more than one name but only one thing, e.g. 'doublet' and 'cloak'; specifically, where there is more than one thing, but they present no differences in respect of their species, as one man and another, or one horse and another: for things like this that fall under the same species are said to be 'specifically the same'. Similarly, too, those things are called generically the same which fall under the same genus, such as a horse and a man. It might appear that the sense in which water from the same spring is called 'the same water' is somehow different and unlike the senses mentioned above: but really such a case as this ought to be ranked in the same class with the things that in one way or another are called 'the same' in view of unity of species. For all such things seem to be of one family and to resemble one another. For the reason why all water is said to be specifically the same as all other water is because of a certain likeness it bears to it, and the only difference in the case of water drawn from the same spring is this, that the likeness is more emphatic: that is why we do not distinguish it from the things that in one way or another are called 'the same' in view of unity of species. It is generally supposed that the term 'the same' is most used in a sense agreed on by every one when applied to what is numerically one. But even so, it is apt to be rendered in more than one sense; its most literal and primary use is found whenever the sameness is rendered in reference to an alternative name or definition, as when a cloak is said to be the same as a doublet, or an animal that walks on two feet is said to be the same as a man: a second sense is when it is rendered in reference to a property, as when what can acquire knowledge is called the same as a man, and what naturally travels upward the same as fire: while a third use is found when it is rendered in reference to some term drawn from Accident, as when the creature who is sitting, or who is musical, is called the same as Socrates. For all these uses mean to signify numerical unity. That what I have just said is true may be best seen where one form of appellation is substituted for another. For often when we give the order to call one of the people who are sitting down, indicating him by name, we change our description, whenever the person to whom we give the order happens not to understand us; he will, we think, understand better from some accidental feature; so we bid him call to us 'the man who is sitting' or 'who is conversing over there'—clearly supposing ourselves to be indicating the same object by its name and by its accident.

Topics: Of 'sameness' then, as has been said,' three senses are to be distinguished. Now one way to confirm that the elements mentioned above are those out of which and through which and to which arguments proceed, is by induction: for if any one were to survey propositions and problems one by one, it would be seen that each was formed either from the definition of something or from its property or from its genus or from its accident. Another way to confirm it is through reasoning. For every predicate of a subject must of

necessity be either convertible with its subject or not: and if it is convertible, it would be its definition or property, for if it signifies the essence, it is the definition; if not, it is a property: for this was what a property is, viz. what is predicated convertibly, but does not signify the essence. If, on the other hand, it is not predicated convertibly of the thing, it either is or is not one of the terms contained in the definition of the subject: and if it be one of those terms, then it will be the genus or the differentia, inasmuch as the definition consists of genus and differentiæ; whereas, if it be not one of those terms, clearly it would be an accident, for accident was said' to be what belongs as an attribute to a subject without being either its definition or its genus or a property.

Topics: Next, then, we must distinguish between the classes of predicates in which the four orders in question are found. These are ten in number: Essence, Quantity, Quality, Relation, Place, Time, Position, State, Activity, Passivity. For the accident and genus and property and definition of anything will always be in one of these categories: for all the propositions found through these signify either something's essence or its quality or quantity or some one of the other types of predicate. It is clear, too, on the face of it that the man who signifies something's essence signifies sometimes a substance, sometimes a quality, sometimes some one of the other types of predicate. For when man is set before him and he says that what is set there is 'a man' or 'an animal', he states its essence and signifies a substance; but when a white colour is set before him and he says that what is set there is 'white' or is 'a colour', he states its essence and signifies a quality. Likewise, also, if a magnitude of a cubit be set before him and he says that what is set there is a magnitude of a cubit, he will be describing its essence and signifying a quantity. Likewise, also, in the other cases: for each of these kinds of predicate, if either it be asserted of itself, or its genus be asserted of it, signifies an essence: if, on the other hand, one kind of predicate is asserted of another kind, it does not signify an essence, but a quantity or a quality or one of the other kinds of predicate. Such, then, and so many, are the subjects on which arguments take place, and the materials with which they start. How we are to acquire them, and by what means we are to become well supplied with them, falls next to be told.

Topics: First, then, a definition must be given of a 'dialectical proposition' and a 'dialectical problem'. For it is not every proposition nor yet every problem that is to be set down as dialectical: for no one in his senses would make a proposition of what no one holds, nor yet make a problem of what is obvious to everybody or to most people: for the latter admits of no doubt, while to the former no one would assent. Now a dialectical proposition consists in asking something that is held by all men or by most men or by the philosophers, i.e. either by all, or by most, or by the most notable of these, provided it be not contrary to the general opinion; for a man would probably assent to the view of the philosophers, if it be not contrary to the opinions of most men. Dialectical propositions also include views which are like those generally accepted; also propositions which contradict the contraries of opinions that are taken to be generally accepted, and also all opinions that are in accordance with the recognized arts. Thus, supposing it to be a general opinion that the knowledge of contraries is the same, it might probably pass for a general opinion also that the perception of contraries is the same: also, supposing it to be a general opinion that there is but one single science of grammar, it might pass for a general opinion that there is but one science of flute-playing as well, whereas, if it be a general opinion that there is

more than one science of grammar, it might pass for a general opinion that there is more than one science of flute-playing as well: for all these seem to be alike and akin. Likewise, also, propositions contradicting the contraries of general opinions will pass as general opinions: for if it be a general opinion that one ought to do good to one's friends, it will also be a general opinion that one ought not to do them harm. Here, that one ought to do harm to one's friends is contrary to the general view, and that one ought not to do them harm is the contradictory of that contrary. Likewise also, if one ought to do good to one's friends, one ought not to do good to one's enemies: this too is the contradictory of the view contrary to the general view; the contrary being that one ought to do good to one's enemies. Likewise, also, in other cases. Also, on comparison, it will look like a general opinion that the contrary predicate belongs to the contrary subject: e.g. if one ought to do good to one's friends, one ought also to do evil to one's enemies. it might appear also as if doing good to one's friends were a contrary to doing evil to one's enemies: but whether this is or is not so in reality as well will be stated in the course of the discussion upon contraries. Clearly also, all opinions that are in accordance with the arts are dialectical propositions; for people are likely to assent to the views held by those who have made a study of these things, e.g. on a question of medicine they will agree with the doctor, and on a question of geometry with the geometrician; and likewise also in other cases.

Topics: Having drawn these definitions, we must distinguish how many species there are of dialectical arguments. There is on the one hand Induction, on the other Reasoning. Now what reasoning is has been said before: induction is a passage from individuals to universals, e.g. the argument that supposing the skilled pilot is the most effective, and likewise the skilled charioteer, then in general the skilled man is the best at his particular task. Induction is the more convincing and clear: it is more readily learnt by the use of the senses, and is applicable generally to the mass of men, though reasoning is more forcible and effective against contradictious people.

Topics: Of propositions and problems there are—to comprehend the matter in outline—three divisions: for some are ethical propositions, some are on natural philosophy, while some are logical. Propositions such as the following are ethical, e.g. 'Ought one rather to obey one's parents or the laws, if they disagree?'; such as this are logical, e.g. 'Is the knowledge of opposites the same or not?'; while such as this are on natural philosophy, e.g. 'Is the universe eternal or not?' Likewise also with problems. The nature of each of the aforesaid kinds of proposition is not easily rendered in a definition, but we have to try to recognize each of them by means of the familiarity attained through induction, examining them in the light of the illustrations given above.

Topics: On the formation, then, of propositions, the above remarks are enough. As regards the number of senses a term bears, we must not only treat of those terms which bear different senses, but we must also try to render their definitions; e.g. we must not merely say that justice and courage are called 'good' in one sense, and that what conduces to vigour and what conduces to health are called so in another, but also that the former are so called because of a certain intrinsic quality they themselves have, the latter because they are productive of a certain result and not because of any intrinsic quality in themselves. Similarly also in other cases.

Topics: Look also at the genera of the objects denoted by the same term, and see if they are different without being subaltern, as (e.g.) 'donkey', which denotes both the animal and

the engine. For the definition of them that corresponds to the name is different: for the one will be declared to be an animal of a certain kind, and the other to be an engine of a certain kind. If, however, the genera be subaltern, there is no necessity for the definitions to be different. Thus (e.g.) 'animal' is the genus of 'raven', and so is 'bird'. Whenever therefore we say that the raven is a bird, we also say that it is a certain kind of animal, so that both the genera are predicated of it. Likewise also whenever we call the raven a 'flying biped animal', we declare it to be a bird: in this way, then, as well, both the genera are predicated of raven, and also their definition. But in the case of genera that are not subaltern this does not happen, for whenever we call a thing an 'engine', we do not call it an animal, nor vice versa.

Topics:1 It is useful also to look at the definition that arises from the use of the term in combination, e.g. of a 'clear (lit. white) body' of a 'clear note'. For then if what is peculiar in each case be abstracted, the same expression ought to remain over. This does not happen in the case of ambiguous terms, e.g. in the cases just mentioned. For the former will be body possessing such and such a colour', while the latter will be 'a note easy to hear'. Abstract, then, 'a body 'and' a note', and the remainder in each case is not the same. It should, however, have been had the meaning of 'clear' in each case been synonymous.

Topics:2 Often in the actual definitions as well ambiguity creeps in unawares, and for this reason the definitions also should be examined. If (e.g.) any one describes what betokens and what produces health as 'related commensurably to health', we must not desist but go on to examine in what sense he has used the term 'commensurably' in each case, e.g. if in the latter case it means that 'it is of the right amount to produce health', whereas in the for it means that 'it is such as to betoken what kind of state prevails'.

Topics: The examination of likeness is useful with a view both to inductive arguments and to hypothetical reasonings, and also with a view to the rendering of definitions. It is useful for inductive arguments, because it is by means of an induction of individuals in cases that are alike that we claim to bring the universal in evidence: for it is not easy to do this if we do not know the points of likeness. It is useful for hypothetical reasonings because it is a general opinion that among similars what is true of one is true also of the rest. If, then, with regard to any of them we are well supplied with matter for a discussion, we shall secure a preliminary admission that however it is in these cases, so it is also in the case before us: then when we have shown the former we shall have shown, on the strength of the hypothesis, the matter before us as well: for we have first made the hypothesis that however it is in these cases, so it is also in the case before us, and have then proved the point as regards these cases. It is useful for the rendering of definitions because, if we are able to see in one glance what is the same in each individual case of it, we shall be at no loss into what genus we ought to put the object before us when we define it: for of the common predicates that which is most definitely in the category of essence is likely to be the genus. Likewise, also, in the case of objects widely divergent, the examination of likeness is useful for purposes of definition, e.g. the sameness of a calm at sea, and windlessness in the air (each being a form of rest), and of a point on a line and the unit in number—each being a starting point. If, then, we render as the genus what is common to all the cases, we shall get the credit of defining not inappropriately. Definition-mongers too nearly always render them in this way: they declare the unit to be the starting-point of number, and the point the starting-point of a line. It is clear, then, that they place them in that which is common to both as their genus.

Topics: Of problems some are universal, others particular. Universal problems are such as 'Every pleasure is good' and 'No pleasure is good'; particular problems are such as 'Some pleasure is good' and 'Some pleasure is not good'. The methods of establishing and overthrowing a view universally are common to both kinds of problems; for when we have shown that a predicate belongs in every case, we shall also have shown that it belongs in some cases. Likewise, also, if we show that it does not belong in any case, we shall also have shown that it does not belong in every case. First, then, we must speak of the methods of overthrowing a view universally, because such are common to both universal and particular problems, and because people more usually introduce theses asserting a predicate than denying it, while those who argue with them overthrow it. The conversion of an appropriate name which is drawn from the element 'accident' is an extremely precarious thing; for in the case of accidents and in no other it is possible for something to be true conditionally and not universally. Names drawn from the elements 'definition' and 'property' and 'genus' are bound to be convertible; e.g. if 'to be an animal that walks on two feet is an attribute of S', then it will be true by conversion to say that 'S is an animal that walks on two feet'. Likewise, also, if drawn from the genus; for if 'to be an animal is an attribute of S', then 'S is an animal'. The same is true also in the case of a property; for if 'to be capable of learning grammar is an attribute of S', then 'S will be capable of learning grammar'. For none of these attributes can possibly belong or not belong in part; they must either belong or not belong absolutely. In the case of accidents, on the other hand, there is nothing to prevent an attribute (e.g. whiteness or justice) belonging in part, so that it is not enough to show that whiteness or justice is an attribute of a man in order to show that he is white or just; for it is open to dispute it and say that he is white or just in part only. Conversion, then, is not a necessary process in the case of accidents.

Topics: Now one commonplace rule is to look and see if a man has ascribed as an accident what belongs in some other way. This mistake is most commonly made in regard to the genera of things, e.g. if one were to say that white happens (accidit) to be a colour—for being a colour does not happen by accident to white, but colour is its genus. The assertor may of course define it so in so many words, saying (e.g.) that 'Justice happens (accidit) to be a virtue'; but often even without such definition it is obvious that he has rendered the genus as an accident; e.g. suppose that one were to say that whiteness is coloured or that walking is in motion. For a predicate drawn from the genus is never ascribed to the species in an inflected form, but always the genera are predicated of their species literally; for the species take on both the name and the definition of their genera. A man therefore who says that white is 'coloured' has not rendered 'coloured' as its genus, seeing that he has used an inflected form, nor yet as its property or as its definition: for the definition and property of a thing belong to it and to nothing else, whereas many things besides white are coloured, e.g. a log, a stone, a man, and a horse. Clearly then he renders it as an accident.

Topics: Another rule is to make definitions both of an accident and of its subject, either of both separately or else of one of them, and then look and see if anything untrue has been assumed as true in the definitions. Thus (e.g.) to see if it is possible to wrong a god, ask what is 'to wrong'? For if it be 'to injure deliberately', clearly it is not possible for a god to be wronged: for it is impossible that God should be injured. Again, to see if the good man is jealous, ask who is the 'jealous' man and what is 'jealousy'. For if 'jealousy' is pain at the

apparent success of some well-behaved person, clearly the good man is not jealous: for then he would be bad. Again, to see if the indignant man is jealous, ask who each of them is: for then it will be obvious whether the statement is true or false; e.g. if he is 'jealous' who grieves at the successes of the good, and he is 'indignant' who grieves at the successes of the evil, then clearly the indignant man would not be jealous. A man should substitute definitions also for the terms contained in his definitions, and not stop until he comes to a familiar term: for often if the definition be rendered whole, the point at issue is not cleared up, whereas if for one of the terms used in the definition a definition be stated, it becomes obvious.

Topics: If you are not well equipped with an argument against the assertion, look among the definitions, real or apparent, of the thing before you, and if one is not enough, draw upon several. For it will be easier to attack people when committed to a definition: for an attack is always more easily made on definitions.

Topics: Moreover, if in any character one thing exceeds and another falls short of the same standard; also, if the one exceeds something which exceeds a given standard, while the other does not reach that standard, then clearly the first named thing exhibits that character in a greater degree. Moreover, you should judge by means of addition, and see if A when added to the same thing as B imparts to the whole such and such a character in a more marked degree than B, or if, when added to a thing which exhibits that character in a less degree, it imparts that character to the whole in a greater degree. Likewise, also, you may judge by means of subtraction: for a thing upon whose subtraction the remainder exhibits such and such a character in a less degree, itself exhibits that character in a greater degree. Also, things exhibit such and such a character in a greater degree if more free from admixture with their contraries; e.g. that is whiter which is more free from admixture with black. Moreover, apart from the rules given above, that has such and such a character in greater degree which admits in a greater degree of the definition proper to the given character; e.g. if the definition of 'white' be 'a colour which pierces the vision', then that is whiter which is in a greater degree a colour that pierces the vision.

Topics: If the problem be indefinite, it is possible to overthrow a statement in only one way; e.g. if a man has asserted that pleasure is good or is not good, without any further definition. For if he meant that a particular pleasure is good, you must show universally that no pleasure is good, if the proposition in question is to be demolished. And likewise, also, if he meant that some particular pleasure is not good you must show universally that all pleasure is good: it is impossible to demolish it in any other way. For if we show that some particular pleasure is not good or is good, the proposition in question is not yet demolished. It is clear, then, that it is possible to demolish an indefinite statement in one way only, whereas it can be established in two ways: for whether we show universally that all pleasure is good, or whether we show that a particular pleasure is good, the proposition in question will have been proved. Likewise, also, supposing we are required to argue that some particular pleasure is not good, if we show that no pleasure is good or that a particular pleasure is not good, we shall have produced an argument in both ways, both universally and in particular, to show that some particular pleasure is not good. If, on the other hand, the statement made be definite, it will be possible to demolish it in two ways; e.g. if it be maintained that it is an attribute of some particular pleasure to be good, while of some it is not: for whether it be shown that all pleasure, or that no pleasure, is good, the

proposition in question will have been demolished. If, however, he has stated that only one single pleasure is good, it is possible to demolish it in three ways: for by showing that all pleasure, or that no pleasure, or that more than one pleasure, is good, we shall have demolished the statement in question. If the statement be made still more definite, e.g. that prudence alone of the virtues is knowledge, there are four ways of demolishing it: for if it be shown that all virtue is knowledge, or that no virtue is so, or that some other virtue (e.g. justice) is so, or that prudence itself is not knowledge, the proposition in question will have been demolished.

Topics: NEXT we must go on to examine questions relating to Genus and Property. These are elements in the questions that relate to definitions, but dialecticians seldom address their inquiries to these by themselves. If, then, a genus be suggested for something that is, first take a look at all objects which belong to the same genus as the thing mentioned, and see whether the genus suggested is not predicated of one of them, as happens in the case of an accident: e.g. if 'good' be laid down to be the genus of 'pleasure', see whether some particular pleasure be not good: for, if so, clearly good' is not the genus of pleasure: for the genus is predicated of all the members of the same species. Secondly, see whether it be predicated not in the category of essence, but as an accident, as 'white' is predicated of 'snow', or 'self-moved' of the soul. For 'snow' is not a kind of 'white', and therefore 'white' is not the genus of snow, nor is the soul a kind of 'moving object': its motion is an accident of it, as it often is of an animal to walk or to be walking. Moreover, 'moving' does not seem to indicate the essence, but rather a state of doing or of having something done to it. Likewise, also, 'white': for it indicates not the essence of snow, but a certain quality of it. So that neither of them is predicated in the category of 'essence'.

Topics: Especially you should take a look at the definition of Accident, and see whether it fits the genus mentioned, as (e.g.) is also the case in the instances just given. For it is possible for a thing to be and not to be self-moved, and likewise, also, for it to be and not to be white. So that neither of these attributes is the genus but an accident, since we were saying that an accident is an attribute which can belong to a thing and also not belong.

Topics: Again, see whether it be necessary or possible for the genus to partake of the object which has been placed in the genus. 'To partake' is defined as 'to admit the definition of that which is partaken. Clearly, therefore, the species partake of the genera, but not the genera of the species: for the species admits the definition of the genus, whereas the genus does not admit that of the species. You must look, therefore, and see whether the genus rendered partakes or can possibly partake of the species, e.g. if any one were to render anything as genus of 'being' or of 'unity': for then the result will be that the genus partakes of the species: for of everything that is, 'being' and 'unity' are predicated, and therefore their definition as well.

Topics: Look, also, at the definitions of the genera, and see whether they apply both to the given species and to the objects which partake of the species. For of necessity the definitions of its genera must be predicated of the species and of the objects which partake of the species: if, then, there be anywhere a discrepancy, clearly what has been rendered is not the genus.

Topics: Moreover, see whether he has placed the genus inside the species, e.g. by taking 'contact' to be a 'juncture', or 'mixture' a 'fusion', or, as in Plato's definition,' 'locomotion' to

be the same as 'carriage'. For there is no necessity that contact should be juncture: rather, conversely, juncture must be contact: for what is in contact is not always joined, though what is joined is always in contact. Likewise, also, in the remaining instances: for mixture is not always a 'fusion' (for to mix dry things does not fuse them), nor is locomotion always 'carriage'. For walking is not generally thought to be carriage: for 'carriage' is mostly used of things that change one place for another involuntarily, as happens in the case of inanimate things. Clearly, also, the species, in the instances given, has a wider denotation than the genus, whereas it ought to be vice versa.

Topics:2 Again, see if to an affection he has ascribed as genus the object of which it is an affection, by defining (e.g.) wind as 'air in motion'. Rather, wind is 'a movement of air': for the same air persists both when it is in motion and when it is still. Hence wind is not 'air' at all: for then there would also have been wind when the air was not in motion, seeing that the same air which formed the wind persists. Likewise, also, in other cases of the kind. Even, then, if we ought in this instance to admit the point that wind is 'air in motion', yet we should accept a definition of the kind, not about all those things of which the genus is not true, but only in cases where the genus rendered is a true predicate. For in some cases, e.g. 'mud' or 'snow', it is not generally held to be true. For people tell you that snow is 'frozen water' and mud is earth mixed with moisture', whereas snow is not water, nor mud earth, so that neither of the terms rendered could be the genus: for the genus should be true of all its species. Likewise neither is wine 'fermented water', as Empedocles speaks of 'water fermented in wood'; for it simply is not water at all.

Topics: Next, for destructive purposes, see whether the same term has been repeated in the property. For people often do this undetected in rendering 'properties' also, just as they do in their 'definitions' as well: but a property to which this has happened will not have been correctly stated: for the repetition of it confuses the hearer; thus inevitably the meaning becomes obscure, and further, such people are thought to babble. Repetition of the same term is likely to happen in two ways; one is, when a man repeatedly uses the same word, as would happen if any one were to render, as a property of fire, 'the body which is the most rarefied of bodies' (for he has repeated the word 'body'); the second is, if a man replaces words by their definitions, as would happen if any one were to render, as a property of earth, 'the substance which is by its nature most easily of all bodies borne downwards in space', and were then to substitute 'substances of such and such a kind' for the word 'bodies': for 'body' and 'a substance of such and such a kind' mean one and the same thing. For he will have repeated the word 'substance', and accordingly neither of the properties would be correctly stated. For constructive purposes, on the other hand, see whether he avoids ever repeating the same term; for then the property will in this respect have been correctly rendered. Thus (e.g.) seeing that he who has stated 'animal capable of acquiring knowledge' as a property of man has avoided repeating the same term several times, the property would in this respect have been correctly rendered of man.

Topics: Next, for destructive purposes, see whether he has rendered in the property any such term as is a universal attribute. For one which does not distinguish its subject from other things is useless, and it is the business of the language of 'properties', as also of the language of definitions, to distinguish. In the case contemplated, therefore, the property will not have been correctly rendered. Thus (e.g.) a man who has stated that it is a property of knowledge to be a 'conception incontrovertible by argument, because of its unity', has used

in the property a term of that kind, viz. 'unity', which is a universal attribute; and therefore the property of knowledge could not have been correctly stated. For constructive purposes, on the other hand, see whether he has avoided all terms that are common to everything and used a term that distinguishes the subject from something: for then the property will in this respect have been correctly stated. Thus (e.g.) inasmuch as he who has said that it is a property of a 'living creature' to 'have a soul' has used no term that is common to everything, it would in this respect have been correctly stated to be a property of a 'living creature' to 'have a soul'.

Topics: Next, for destructive purposes see whether he renders more than one property of the same thing, without a definite proviso that he is stating more than one: for then the property will not have been correctly stated. For just as in the case of definitions too there should be no further addition beside the expression which shows the essence, so too in the case of properties nothing further should be rendered beside the expression that constitutes the property mentioned: for such an addition is made to no purpose. Thus (e.g.) a man who has said that it is a property of fire to be 'the most rarefied and lightest body' has rendered more than one property (for each term is a true predicate of fire alone); and so it could not be a correctly stated property of fire to be 'the most rarefied and lightest body'. On the other hand, for constructive purposes, see whether he has avoided rendering more than one property of the same thing, and has rendered one only: for then the property will in this respect have been correctly stated. Thus (e.g.) a man who has said that it is a property of a liquid to be a 'body adaptable to every shape' has rendered as its property a single character and not several, and so the property of 'liquid' would in this respect have been correctly stated.

Topics: Next, for destructive purposes, see whether he has rendered the definition as a property: for then the property will not have been correctly stated: for the property of a thing ought not to show its essence. Thus (e.g.) a man who has said that it is the property of man to be 'a walking, biped animal' has rendered a property of man so as to signify his essence, and so the property of man could not have been correctly rendered. For constructive purposes, on the other hand, see whether the property which he has rendered forms a predicate convertible with its subject, without, however, signifying its essence: for then the property will in this respect have been correctly rendered. Thus (e.g.) he who has stated that it is a property of man to be a 'naturally civilized animal' has rendered the property so as to be convertible with its subject, without, however, showing its essence, and so the property of man' would in this respect have been correctly rendered.

Topics: Next, for destructive purposes, see whether he has rendered the property without having placed the subject within its essence. For of properties, as also of definitions, the first term to be rendered should be the genus, and then the rest of it should be appended immediately afterwards, and should distinguish its subject from other things. Hence a property which is not stated in this way could not have been correctly rendered. Thus (e.g.) a man who has said that it is a property of a living creature to 'have a soul' has not placed 'living creature' within its essence, and so the property of a living creature could not have been correctly stated. For constructive purposes, on the other hand, see whether a man first places within its essence the subject whose property he is rendering, and then appends the rest: for then the property will in this respect have been correctly rendered. Thus (e.g.) he who has stated that is a property of man to be an 'animal capable of receiving

knowledge', has rendered the property after placing the subject within its essence, and so the property of 'man' would in this respect have been correctly rendered.

Topics: Next, for destructive purposes, see if the property cannot possibly belong simultaneously, but must belong either as posterior or as prior to the attribute described in the name: for then what is stated to be a property will not be a property either never, or not always. Thus (e.g.) inasmuch as it is possible for the attribute 'walking through the market-place' to belong to an object as prior and as posterior to the attribute 'man', 'walking through the market-place' could not be a property of 'man' either never, or not always. For constructive purposes, on the other hand, see if it always and of necessity belongs simultaneously, without being either a definition or a differentia: for then what is stated not to be a property will be a property. Thus (e.g.) the attribute 'an animal capable of receiving knowledge' always and of necessity belongs simultaneously with the attribute 'man', and is neither differentia nor definition of its subject, and so 'an animal capable of receiving knowledge' would be a property of 'man'.

Topics: Next, for destructive purposes, see if he has stated a thing as a property of itself: for then what has been stated to be a property will not be a property. For a thing itself always shows its own essence, and what shows the essence is not a property but a definition. Thus (e.g.) he who has said that 'becoming' is a property of 'beautiful' has rendered the term as a property of itself (for 'beautiful' and 'becoming' are the same); and so 'becoming' could not be a property of 'beautiful'. For constructive purposes, on the other hand, see if he has avoided rendering a thing as a property of itself, but has yet stated a convertible predicate: for then what is stated not to be a property will be a property. Thus he who has stated 'animate substance' as a property of 'living-creature' has not stated 'living-creature' as a property of itself, but has rendered a convertible predicate, so that 'animate substance' would be a property of 'living-creature'.

Topics: THE discussion of Definitions falls into five parts. For you have to show either (1) that it is not true at all to apply the expression as well to that to which the term is applied (for the definition of Man ought to be true of every man); or (2) that though the object has a genus, he has failed to put the object defined into the genus, or to put it into the appropriate genus (for the framer of a definition should first place the object in its genus, and then append its differences: for of all the elements of the definition the genus is usually supposed to be the principal mark of the essence of what is defined): or (3) that the expression is not peculiar to the object (for, as we said above as well, a definition ought to be peculiar): or else (4) see if, though he has observed all the aforesaid cautions, he has yet failed to define the object, that is, to express its essence. (5) It remains, apart from the foregoing, to see if he has defined it, but defined it incorrectly.

Topics: Incorrectness falls into two branches: (1) first, the use of obscure language (for the language of a definition ought to be the very clearest possible, seeing that the whole purpose of rendering it is to make something known); (secondly, if the expression used be longer than is necessary: for all additional matter in a definition is superfluous. Again, each of the aforesaid branches is divided into a number of others.

Topics: One commonplace rule, then, in regard to obscurity is, See if the meaning intended by the definition involves an ambiguity with any other, e.g. 'Becoming is a passage into being', or 'Health is the balance of hot and cold elements'. Here 'passage' and 'balance'

are ambiguous terms: it is accordingly not clear which of the several possible senses of the term he intends to convey. Likewise also, if the term defined be used in different senses and he has spoken without distinguishing between them: for then it is not clear to which of them the definition rendered applies, and one can then bring a captious objection on the ground that the definition does not apply to all the things whose definition he has rendered: and this kind of thing is particularly easy in the case where the definer does not see the ambiguity of his terms. Or, again, the questioner may himself distinguish the various senses of the term rendered in the definition, and then institute his argument against each: for if the expression used be not adequate to the subject in any of its senses, it is clear that he cannot have defined it in any sense aright.

Topics: Another rule is, See if he has used a metaphorical expression, as, for instance, if he has defined knowledge as 'unsupplantable', or the earth as a 'nurse', or temperance as a 'harmony'. For a metaphorical expression is always obscure. It is possible, also, to argue sophistically against the user of a metaphorical expression as though he had used it in its literal sense: for the definition stated will not apply to the term defined, e.g. in the case of temperance: for harmony is always found between notes. Moreover, if harmony be the genus of temperance, then the same object will occur in two genera of which neither contains the other: for harmony does not contain virtue, nor virtue harmony. Again, see if he uses terms that are unfamiliar, as when Plato describes the eye as 'brow-shaded', or a certain spider as 'poison-fanged', or the marrow as 'bone-formed'. For an unusual phrase is always obscure.

Topics: Moreover, see if from the expression used the definition of the contrary be not clear; for definitions that have been correctly rendered also indicate their contraries as well. Or, again, see if, when it is merely stated by itself, it is not evident what it defines: just as in the works of the old painters, unless there were an inscription, the figures used to be unrecognizable.

Topics: If, then, the definition be not clear, you should proceed to examine on lines such as these. If, on the other hand, he has phrased the definition redundantly, first of all look and see whether he has used any attribute that belongs universally, either to real objects in general, or to all that fall under the same genus as the object defined: for the mention of this is sure to be redundant. For the genus ought to divide the object from things in general, and the differentia from any of the things contained in the same genus. Now any term that belongs to everything separates off the given object from absolutely nothing, while any that belongs to all the things that fall under the same genus does not separate it off from the things contained in the same genus. Any addition, then, of that kind will be pointless.

Topics: Or see if, though the additional matter may be peculiar to the given term, yet even when it is struck out the rest of the expression too is peculiar and makes clear the essence of the term. Thus, in the definition of man, the addition 'capable of receiving knowledge' is superfluous; for strike it out, and still the expression is peculiar and makes clear his essence. Speaking generally, everything is superfluous upon whose removal the remainder still makes the term that is being defined clear. Such, for instance, would also be the definition of the soul, assuming it to be stated as a 'self-moving number'; for the soul is just 'the self-moving', as Plato defined it. Or perhaps the expression used, though appropriate, yet does not declare the essence, if the word 'number' be eliminated. Which of the two is the real state of the case it is difficult to determine clearly: the right way to treat

the matter in all cases is to be guided by convenience. Thus (e.g.) it is said that the definition of phlegm is the 'undigested moisture that comes first off food'. Here the addition of the word 'undigested' is superfluous, seeing that 'the first' is one and not many, so that even when undigested' is left out the definition will still be peculiar to the subject: for it is impossible that both phlegm and also something else should both be the first to arise from the food. Or perhaps the phlegm is not absolutely the first thing to come off the food, but only the first of the undigested matters, so that the addition 'undigested' is required; for stated the other way the definition would not be true unless the phlegm comes first of all.

Topics: Moreover, see if anything contained in the definition fails to apply to everything that falls under the same species: for this sort of definition is worse than those which include an attribute belonging to all things universally. For in that case, if the remainder of the expression be peculiar, the whole too will be peculiar: for absolutely always, if to something peculiar anything whatever that is true be added, the whole too becomes peculiar. Whereas if any part of the expression do not apply to everything that falls under the same species, it is impossible that the expression as a whole should be peculiar: for it will not be predicated convertibly with the object; e.g. 'a walking biped animal six feet high': for an expression of that kind is not predicated convertibly with the term, because the attribute 'six feet high' does not belong to everything that falls under the same species.

Topics: Again, see if he has said the same thing more than once, saying (e.g.) 'desire' is a 'conation for the pleasant'. For 'desire' is always 'for the pleasant', so that what is the same as desire will also be 'for the pleasant'. Accordingly our definition of desire becomes 'conation for the pleasant': for the word 'desire' is the exact equivalent of the words 'conation for the pleasant', so that both alike will be 'for the pleasant'. Or perhaps there is no absurdity in this; for consider this instance:—Man is a biped': therefore, what is the same as man is a biped: but 'a walking biped animal' is the same as man, and therefore walking biped animal is a biped'. But this involves no real absurdity. For 'biped' is not a predicate of 'walking animal': if it were, then we should certainly have 'biped' predicated twice of the same thing; but as a matter of fact the subject said to be a biped is 'a walking biped animal', so that the word 'biped' is only used as a predicate once. Likewise also in the case of 'desire' as well: for it is not 'conation' that is said to be 'for the pleasant', but rather the whole idea, so that there too the predication is only made once. Absurdity results, not when the same word is uttered twice, but when the same thing is more than once predicated of a subject; e.g. if he says, like Xenocrates, that wisdom defines and contemplates reality:' for definition is a certain type of contemplation, so that by adding the words 'and contemplates' over again he says the same thing twice over. Likewise, too, those fail who say that 'cooling' is 'the privation of natural heat'. For all privation is a privation of some natural attribute, so that the addition of the word 'natural' is superfluous: it would have been enough to say 'privation of heat', for the word 'privation' shows of itself that the heat meant is natural heat.

Topics: Whether, then, a man defines a thing correctly or incorrectly you should proceed to examine on these and similar lines. But whether he has mentioned and defined its essence or no, should be examined as follows: First of all, see if he has failed to make the definition through terms that are prior and more intelligible. For the reason why the definition is rendered is to make known the term stated, and we make things known by taking not any random terms, but such as are prior and more intelligible, as is done in

demonstrations (for so it is with all teaching and learning); accordingly, it is clear that a man who does not define through terms of this kind has not defined at all. Otherwise, there will be more than one definition of the same thing: for clearly he who defines through terms that are prior and more intelligible has also framed a definition, and a better one, so that both would then be definitions of the same object. This sort of view, however, does not generally find acceptance: for of each real object the essence is single: if, then, there are to be a number of definitions of the same thing, the essence of the object will be the same as it is represented to be in each of the definitions, and these representations are not the same, inasmuch as the definitions are different. Clearly, then, any one who has not defined a thing through terms that are prior and more intelligible has not defined it at all.

Topics: The statement that a definition has not been made through more intelligible terms may be understood in two senses, either supposing that its terms are absolutely less intelligible, or supposing that they are less intelligible to us: for either sense is possible. Thus absolutely the prior is more intelligible than the posterior, a point, for instance, than a line, a line than a plane, and a plane than a solid; just as also a unit is more intelligible than a number; for it is the prius and starting-point of all number. Likewise, also, a letter is more intelligible than a syllable. Whereas to us it sometimes happens that the converse is the case: for the solid falls under perception most of all—more than a plane—and a plane more than a line, and a line more than a point; for most people learn things like the former earlier than the latter; for any ordinary intelligence can grasp them, whereas the others require an exact and exceptional understanding.

Topics: Absolutely, then, it is better to try to make what is posterior known through what is prior, inasmuch as such a way of procedure is more scientific. Of course, in dealing with persons who cannot recognize things through terms of that kind, it may perhaps be necessary to frame the expression through terms that are intelligible to them. Among definitions of this kind are those of a point, a line, and a plane, all of which explain the prior by the posterior; for they say that a point is the limit of a line, a line of a plane, a plane of a solid. One must, however, not fail to observe that those who define in this way cannot show the essential nature of the term they define, unless it so happens that the same thing is more intelligible both to us and also absolutely, since a correct definition must define a thing through its genus and its differentiæ, and these belong to the order of things which are absolutely more intelligible than, and prior to, the species. For annul the genus and differentia, and the species too is annulled, so that these are prior to the species. They are also more intelligible; for if the species be known, the genus and differentia must of necessity be known as well (for any one who knows what a man is knows also what ‘animal’ and ‘walking’ are), whereas if the genus or the differentia be known it does not follow of necessity that the species is known as well: thus the species is less intelligible. Moreover, those who say that such definitions, viz. those which proceed from what is intelligible to this, that, or the other man, are really and truly definitions, will have to say that there are several definitions of one and the same thing. For, as it happens, different things are more intelligible to different people, not the same things to all; and so a different definition would have to be rendered to each several person, if the definition is to be constructed from what is more intelligible to particular individuals. Moreover, to the same people different things are more intelligible at different times; first of all the objects of sense; then, as they become more sharpwitted, the converse; so that those who hold that a

definition ought to be rendered through what is more intelligible to particular individuals would not have to render the same definition at all times even to the same person. It is clear, then, that the right way to define is not through terms of that kind, but through what is absolutely more intelligible: for only in this way could the definition come always to be one and the same. Perhaps, also, what is absolutely intelligible is what is intelligible, not to all, but to those who are in a sound state of understanding, just as what is absolutely healthy is what is healthy to those in a sound state of body. All such points as this ought to be made very precise, and made use of in the course of discussion as occasion requires. The demolition of a definition will most surely win a general approval if the definer happens to have framed his expression neither from what is absolutely more intelligible nor yet from what is so to us.

Topics: One form, then, of the failure to work through more intelligible terms is the exhibition of the prior through the posterior, as we remarked before.' Another form occurs if we find that the definition has been rendered of what is at rest and definite through what is indefinite and in motion: for what is still and definite is prior to what is indefinite and in motion.

Topics: (1) The first is when an opposite has been defined through its opposite, e.g.i. good through evil: for opposites are always simultaneous by nature. Some people think, also, that both are objects of the same science, so that the one is not even more intelligible than the other. One must, however, observe that it is perhaps not possible to define some things in any other way, e.g. the double without the half, and all the terms that are essentially relative: for in all such cases the essential being is the same as a certain relation to something, so that it is impossible to understand the one term without the other, and accordingly in the definition of the one the other too must be embraced. One ought to learn up all such points as these, and use them as occasion may seem to require.

Topics: (2) Another is—if he has used the term defined itself. This passes unobserved when the actual name of the object is not used, e.g. supposing any one had defined the sun as a star that appears by day'. For in bringing in 'day' he brings in the sun. To detect errors of this sort, exchange the word for its definition, e.g. the definition of 'day' as the 'passage of the sun over the earth'. Clearly, whoever has said 'the passage of the sun over the earth' has said 'the sun', so that in bringing in the 'day' he has brought in the sun.

Topics: Generally speaking, then, one commonplace rule relates to the failure to frame the expression by means of terms that are prior and more intelligible: and of this the subdivisions are those specified above. A second is, see whether, though the object is in a genus, it has not been placed in a genus. This sort of error is always found where the essence of the object does not stand first in the expression, e.g. the definition of 'body' as 'that which has three dimensions', or the definition of 'man', supposing any one to give it, as 'that which knows how to count': for it is not stated what it is that has three dimensions, or what it is that knows how to count: whereas the genus is meant to indicate just this, and is submitted first of the terms in the definition.

Topics: Moreover, see if, while the term to be defined is used in relation to many things, he has failed to render it in relation to all of them; as (e.g.) if he define 'grammar' as the 'knowledge how to write from dictation': for he ought also to say that it is a knowledge how to read as well. For in rendering it as 'knowledge of writing' has no more defined it than by

rendering it as 'knowledge of reading': neither in fact has succeeded, but only he who mentions both these things, since it is impossible that there should be more than one definition of the same thing. It is only, however, in some cases that what has been said corresponds to the actual state of things: in some it does not, e.g. all those terms which are not used essentially in relation to both things: as medicine is said to deal with the production of disease and health; for it is said essentially to do the latter, but the former only by accident: for it is absolutely alien to medicine to produce disease. Here, then, the man who renders medicine as relative to both of these things has not defined it any better than he who mentions the one only. In fact he has done it perhaps worse, for any one else besides the doctor is capable of producing disease.

Topics: Moreover, see if he divides the genus by a negation, as those do who define line as 'length without breadth': for this means simply that it has not any breadth. The genus will then be found to partake of its own species: for, since of everything either an affirmation or its negation is true, length must always either lack breadth or possess it, so that 'length' as well, i.e. the genus of 'line', will be either with or without breadth. But 'length without breadth' is the definition of a species, as also is 'length with breadth': for 'without breadth' and 'with breadth' are differentiæ, and the genus and differentia constitute the definition of the species. Hence the genus would admit of the definition of its species. Likewise, also, it will admit of the definition of the differentia, seeing that one or the other of the aforesaid differentiæ is of necessity predicated of the genus. The usefulness of this principle is found in meeting those who assert the existence of 'Ideas': for if absolute length exist, how will it be predicable of the genus that it has breadth or that it lacks it? For one assertion or the other will have to be true of 'length' universally, if it is to be true of the genus at all: and this is contrary to the fact: for there exist both lengths which have, and lengths which have not, breadth. Hence the only people against whom the rule can be employed are those who assert that a genus is always numerically one; and this is what is done by those who assert the real existence of the 'Ideas'; for they allege that absolute length and absolute animal are the genus.

Topics:3 Look and see also if the definer renders each relative term relatively to its natural purpose: for while in some cases the particular relative term can be used in relation to its natural purpose only and to nothing else, some can be used in relation to something else as well. Thus sight can only be used for seeing, but a strigil can also be used to dip up water. Still, if any one were to define a strigil as an instrument for dipping water, he has made a mistake: for that is not its natural function [An instrument used in ancient Greece and Rome for scraping the skin after a bath.]. The definition of a thing's natural function is 'that for which it would be used by the prudent man, acting as such, and by the science that deals specially with that thing'.

Topics:5 Moreover, if the thing of which the term defined has been stated to be an affection or disposition, or whatever it may be, be unable to admit it, the definer has made a mistake. For every disposition and every affection is formed naturally in that of which it is an affection or disposition, as knowledge, too, is formed in the soul, being a disposition of soul. Sometimes, however, people make bad mistakes in matters of this sort, e.g. all those who say that 'sleep' is a 'failure of sensation', or that 'perplexity' is a state of 'equality between contrary reasonings', or that 'pain' is a 'violent disruption of parts that are naturally conjoined'. For sleep is not an attribute of sensation, whereas it ought to be, if it

is a failure of sensation. Likewise, perplexity is not an attribute of opposite reasonings, nor pain of parts naturally conjoined: for then inanimate things will be in pain, since pain will be present in them. Similar in character, too, is the definition of 'health', say, as a 'balance of hot and cold elements': for then health will be necessarily exhibited by the hot and cold elements: for balance of anything is an attribute inherent in those things of which it is the balance, so that health would be an attribute of them. Moreover, people who define in this way put effect for cause, or cause for effect. For the disruption of parts naturally conjoined is not pain, but only a cause of pain: nor again is a failure of sensation sleep, but the one is the cause of the other: for either we go to sleep because sensation fails, or sensation fails because we go to sleep. Likewise also an equality between contrary reasonings would be generally considered to be a cause of perplexity: for it is when we reflect on both sides of a question and find everything alike to be in keeping with either course that we are perplexed which of the two we are to do.

Topics:6 Moreover, with regard to all periods of time look and see whether there be any discrepancy between the differentia and the thing defined: e.g. supposing the 'immortal' to be defined as a 'living thing immune at present from destruction'. For a living thing that is immune 'at present' from destruction will be immortal 'at present'. Possibly, indeed, in this case this result does not follow, owing to the ambiguity of the words 'immune at present from destruction': for it may mean either that the thing has not been destroyed at present, or that it cannot be destroyed at present, or that at present it is such that it never can be destroyed. Whenever, then, we say that a living thing is at present immune from destruction, we mean that it is at present a living thing of such a kind as never to be destroyed: and this is equivalent to saying that it is immortal, so that it is not meant that it is immortal only at present. Still, if ever it does happen that what has been rendered according to the definition belongs in the present only or past, whereas what is meant by the word does not so belong, then the two could not be the same. So, then, this commonplace rule ought to be followed, as we have said.

Topics: You should look and see also whether the term being defined is applied in consideration of something other than the definition rendered. Suppose (e.g.) a definition of 'justice' as the 'ability to distribute what is equal'. This would not be right, for 'just' describes rather the man who chooses, than the man who is able to distribute what is equal: so that justice could not be an ability to distribute what is equal: for then also the most just man would be the man with the most ability to distribute what is equal.

Topics: Moreover, see if the thing admits of degrees, whereas what is rendered according to the definition does not, or, vice versa, what is rendered according to the definition admits of degrees while the thing does not. For either both must admit them or else neither, if indeed what is rendered according to the definition is the same as the thing. Moreover, see if, while both of them admit of degrees, they yet do not both become greater together: e.g. suppose sexual love to be the desire for intercourse: for he who is more intensely in love has not a more intense desire for intercourse, so that both do not become intensified at once: they certainly should, however, had they been the same thing.

Topics: Moreover, suppose two things to be before you, see if the term to be defined applies more particularly to the one to which the content of the definition is less applicable. Take, for instance, the definition of 'fire' as the 'body that consists of the most rarefied particles'. For 'fire' denotes flame rather than light, but flame is less the body that consists

of the most rarefied particles than is light: whereas both ought to be more applicable to the same thing, if they had been the same. Again, see if the one expression applies alike to both the objects before you, while the other does not apply to both alike, but more particularly to one of them.

Topics: Moreover, see if he renders the definition relative to two things taken separately: thus, 'the beautiful' is 'what is pleasant to the eyes or to the ears": or 'the real' is 'what is capable of being acted upon or of acting'. For then the same thing will be both beautiful and not beautiful, and likewise will be both real and not real. For 'pleasant to the ears' will be the same as 'beautiful', so that 'not pleasant to the ears' will be the same as 'not beautiful': for of identical things the opposites, too, are identical, and the opposite of 'beautiful' is 'not beautiful', while of 'pleasant to the ears' the opposite is not pleasant to the cars': clearly, then, 'not pleasant to the ears' is the same thing as 'not beautiful'. If, therefore, something be pleasant to the eyes but not to the ears, it will be both beautiful and not beautiful. In like manner we shall show also that the same thing is both real and unreal.

Topics: Moreover, of both genera and differentiæ and all the other terms rendered in definitions you should frame definitions in lieu of the terms, and then see if there be any discrepancy between them.

Topics: If the term defined be relative, either in itself or in respect of its genus, see whether the definition fails to mention that to which the term, either in itself or in respect of its genus, is relative, e.g. if he has defined 'knowledge' as an 'incontrovertible conception' or 'wishing' as 'painless conation'. For of everything relative the essence is relative to something else, seeing that the being of every relative term is identical with being in a certain relation to something. He ought, therefore, to have said that knowledge is 'conception of a knowable' and that wishing is 'conation for a good'. Likewise, also, if he has defined 'grammar' as 'knowledge of letters': whereas in the definition there ought to be rendered either the thing to which the term itself is relative, or that, whatever it is, to which its genus is relative. Or see if a relative term has been described not in relation to its end, the end in anything being whatever is best in it or gives its purpose to the rest. Certainly it is what is best or final that should be stated, e.g. that desire is not for the pleasant but for pleasure: for this is our purpose in choosing what is pleasant as well.

Topics: Moreover, in the case of conations, and in any other cases where it applies, see if the word 'apparent' is left out, e.g. 'wishing is a conation after the good', or 'desire is a conation after the pleasant'—instead of saying 'the apparently good', or 'pleasant'. For often those who exhibit the conation do not perceive what is good or pleasant, so that their aim need not be really good or pleasant, but only apparently so. They ought, therefore, to have rendered the definition also accordingly. On the other hand, any one who maintains the existence of Ideas ought to be brought face to face with his Ideas, even though he does render the word in question: for there can be no Idea of anything merely apparent: the general view is that an Idea is always spoken of in relation to an Idea: thus absolute desire is for the absolutely pleasant, and absolute wishing is for the absolutely good; they therefore cannot be for an apparent good or an apparently pleasant: for the existence of an absolutely-apparently-good or pleasant would be an absurdity.

Topics: Moreover, if the definition be of the state of anything, look at what is in the state, while if it be of what is in the state, look at the state: and likewise also in other cases of the kind. Thus if the pleasant be identical with the beneficial, then, too, the man who is pleased is benefited. Speaking generally, in definitions of this sort it happens that what the definer defines is in a sense more than one thing: for in defining knowledge, a man in a sense defines ignorance as well, and likewise also what has knowledge and what lacks it, and what it is to know and to be ignorant. For if the first be made clear, the others become in a certain sense clear as well. We have, then, to be on our guard in all such cases against discrepancy, using the elementary principles drawn from consideration of contraries and of coordinates.

Topics: See, also, if the opposite of the term has the opposite definition, whether (e.g.) the definition of 'half' is the opposite of that of 'double': for if 'double' is 'that which exceeds another by an equal amount to that other', 'half' is 'that which is exceeded by an amount equal to itself'. In the same way, too, with contraries. For to the contrary term will apply the definition that is contrary in some one of the ways in which contraries are conjoined. Thus (e.g.) if 'useful' = 'productive of good', 'injurious' = 'productive of evil' or 'destructive of good', for one or the other of these is bound to be contrary to the term originally used. Suppose, then, neither of these things to be the contrary of the term originally used, then clearly neither of the definitions rendered later could be the definition of the contrary of the term originally defined: and therefore the definition originally rendered of the original term has not been rightly rendered either. Seeing, moreover, that of contraries, the one is sometimes a word forced to denote the privation of the other, as (e.g.) inequality is generally held to be the privation of equality (for 'unequal' merely describes things that are not equal'), it is therefore clear that that contrary whose form denotes the privation must of necessity be defined through the other; whereas the other cannot then be defined through the one whose form denotes the privation; for else we should find that each is being interpreted by the other. We must in the case of contrary terms keep an eye on this mistake, e.g. supposing any one were to define equality as the contrary of inequality: for then he is defining it through the term which denotes privation of it. Moreover, a man who so defines is bound to use in his definition the very term he is defining; and this becomes clear, if for the word we substitute its definition. For to say 'inequality' is the same as to say 'privation of equality'. Therefore equality so defined will be 'the contrary of the privation of equality', so that he would have used the very word to be defined. Suppose, however, that neither of the contraries be so formed as to denote privation, but yet the definition of it be rendered in a manner like the above, e.g. suppose 'good' to be defined as 'the contrary of evil', then, since it is clear that 'evil' too will be 'the contrary of good' (for the definition of things that are contrary in this must be rendered in a like manner), the result again is that he uses the very term being defined: for 'good' is inherent in the definition of 'evil'. If, then, 'good' be the contrary of evil, and evil be nothing other than the 'contrary of good', then 'good' will be the 'contrary of the contrary of good'. Clearly, then, he has used the very word to be defined.

Topics: Moreover, see whether the like inflexions in the definition apply to the like inflexions of the term; e.g. if 'beneficial' means 'productive of health', does 'beneficially' mean productively of health' and a 'benefactor' a 'producer of health'?

Topics: Look too and see whether the definition given will apply to the Idea as well. For in some cases it will not do so; e.g. in Plato's definition where he ["Platonic definition where

he" is the original translation, "he" is not "Platonic" j.c.] adds the word 'mortal' in his definitions of living creatures: for the Idea (e.g. the absolute Man) is not mortal, so that the definition will not fit the Idea. So always wherever the words 'capable of acting on' or 'capable of being acted upon' are added, the definition and the Idea are absolutely bound to be discrepant: for those who assert the existence of Ideas hold that they are incapable of being acted upon, or of motion. In dealing with these people even arguments of this kind are useful.

Topics: Further, see if he has rendered a single common definition of terms that are used ambiguously. For terms whose definition corresponding their common name is one and the same, are synonymous; if, then, the definition applies in a like manner to the whole range of the ambiguous term, it is not true of any one of the objects described by the term. This is, moreover, what happens to Dionysius' definition of 'life' when stated as 'a movement of a creature sustained by nutriment, congenitally present with it': for this is found in plants as much as in animals, whereas 'life' is generally understood to mean not one kind of thing only, but to be one thing in animals and another in plants. It is possible to hold the view that life is a synonymous term and is always used to describe one thing only, and therefore to render the definition in this way on purpose: or it may quite well happen that a man may see the ambiguous character of the word, and wish to render the definition of the one sense only, and yet fail to see that he has rendered a definition common to both senses instead of one peculiar to the sense he intends. In either case, whichever course he pursues, he is equally at fault. Since ambiguous terms sometimes pass unobserved, it is best in questioning to treat such terms as though they were synonymous (for the definition of the one sense will not apply to the other, so that the answerer will be generally thought not to have defined it correctly, for to a synonymous term the definition should apply in its full range), whereas in answering you should yourself distinguish between the senses. Further, as some answerers call 'ambiguous' what is really synonymous, whenever the definition rendered fails to apply universally, and, vice versa, call synonymous what is really ambiguous supposing their definition applies to both senses of the term, one should secure a preliminary admission on such points, or else prove beforehand that so-and-so is ambiguous or synonymous, as the case may be: for people are more ready to agree when they do not foresee what the consequence will be. If, however, no admission has been made, and the man asserts that what is really synonymous is ambiguous because the definition he has rendered will not apply to the second sense as well, see if the definition of this second meaning applies also to the other meanings: for if so, this meaning must clearly be synonymous with those others. Otherwise, there will be more than one definition of those other meanings, for there are applicable to them two distinct definitions in explanation of the term, viz. the one previously rendered and also the later one. Again, if any one were to define a term used in several senses, and, finding that his definition does not apply to them all, were to contend not that the term is ambiguous, but that even the term does not properly apply to all those senses, just because his definition will not do so either, then one may retort to such a man that though in some things one must not use the language of the people, yet in a question of terminology one is bound to employ the received and traditional usage and not to upset matters of that sort.

Topics: Suppose now that a definition has been rendered of some complex term, take away the definition of one of the elements in the complex, and see if also the rest of the

definition defines the rest of it: if not, it is clear that neither does the whole definition define the whole complex. Suppose, e.g. that some one has defined a 'finite straight line' as 'the limit of a finite plane, such that its centre is in a line with its extremes'; if now the definition of a finite line' be the 'limit of a finite plane', the rest (viz. 'such that its centre is in a line with its extremes') ought to be a definition of straight'. But an infinite straight line has neither centre nor extremes and yet is straight so that this remainder does not define the remainder of the term.

Topics: Moreover, if the term defined be a compound notion, see if the definition rendered be equimembral with the term defined. A definition is said to be equimembral with the term defined when the number of the elements compounded in the latter is the same as the number of nouns and verbs in the definition. For the exchange in such cases is bound to be merely one of term for term, in the case of some if not of all, seeing that there are no more terms used now than formerly; whereas in a definition terms ought to be rendered by phrases, if possible in every case, or if not, in the majority. For at that rate, simple objects too could be defined by merely calling them by a different name, e.g. 'cloak' instead of 'doublet'.

Topics: The mistake is even worse, if actually a less well known term be substituted, e.g. 'pellucid mortal' for 'white man': for it is no definition, and moreover is less intelligible when put in that form.

Topics: Moreover, see if in replacing one of the terms by something else he has exchanged the genus and not the differentia, as in the example just given: for 'speculative' is a less familiar term than knowledge; for the one is the genus and the other the differentia, and the genus is always the most familiar term of all; so that it is not this, but the differentia, that ought to have been changed, seeing that it is the less familiar. It might be held that this criticism is ridiculous: because there is no reason why the most familiar term should not describe the differentia, and not the genus; in which case, clearly, the term to be altered would also be that denoting the genus and not the differentia. If, however, a man is substituting for a term not merely another term but a phrase, clearly it is of the differentia rather than of the genus that a definition should be rendered, seeing that the object of rendering the definition is to make the subject familiar; for the differentia is less familiar than the genus.

Topics: If he has rendered the definition of the differentia, see whether the definition rendered is common to it and something else as well: e.g. whenever he says that an odd number is a 'number with a middle', further definition is required of how it has a middle: for the word 'number' is common to both expressions, and it is the word 'odd' for which the phrase has been substituted. Now both a line and a body have a middle, yet they are not 'odd'; so that this could not be a definition of 'odd'. If, on the other hand, the phrase 'with a middle' be used in several senses, the sense here intended requires to be defined. So that this will either discredit the definition or prove that it is no definition at all.

Topics: Again, see if the term of which he renders the definition is a reality, whereas what is contained in the definition is not, e.g. Suppose 'white' to be defined as 'colour mingled with fire': for what is bodiless cannot be mingled with body, so that 'colour' 'mingled with fire' could not exist, whereas 'white' does exist.

Topics: Moreover, those who in the case of relative terms do not distinguish to what the object is related, but have described it only so as to include it among too large a number of things, are wrong either wholly or in part; e.g. suppose some one to have defined 'medicine' as a science of Reality'. For if medicine be not a science of anything that is real, the definition is clearly altogether false; while if it be a science of some real thing, but not of another, it is partly false; for it ought to hold of all reality, if it is said to be of Reality essentially and not accidentally: as is the case with other relative terms: for every object of knowledge is a term relative to knowledge: likewise, also, with other relative terms, inasmuch as all such are convertible. Moreover, if the right way to render account of a thing be to render it as it is not in itself but accidentally, then each and every relative term would be used in relation not to one thing but to a number of things. For there is no reason why the same thing should not be both real and white and good, so that it would be a correct rendering to render the object in relation to any one whatsoever of these, if to render what it is accidentally be a correct way to render it. It is, moreover, impossible that a definition of this sort should be peculiar to the term rendered: for not only but the majority of the other sciences too, have for their object some real thing, so that each will be a science of reality. Clearly, then, such a definition does not define any science at all; for a definition ought to be peculiar to its own term, not general.

Topics: Sometimes, again, people define not the thing but only the thing in a good or perfect condition. Such is the definition of a rhetorician as 'one who can always see what will persuade in the given circumstances, and omit nothing'; or of a thief, as 'one who pilfers in secret': for clearly, if they each do this, then the one will be a good rhetorician, and the other a good thief: whereas it is not the actual pilfering in secret, but the wish to do it, that constitutes the thief.

Topics: Again, see if he has rendered what is desirable for its own sake as desirable for what it produces or does, or as in any way desirable because of something else, e.g. by saying that justice is 'what preserves the laws' or that wisdom is 'what produces happiness'; for what produces or preserves something else is one of the things desirable for something else. It might be said that it is possible for what is desirable in itself to be desirable for something else as well: but still to define what is desirable in itself in such a way is none the less wrong: for the essence contains par excellence what is best in anything, and it is better for a thing to be desirable in itself than to be desirable for something else, so that this is rather what the definition too ought to have indicated.

Topics: See also whether in defining anything a man has defined it as an 'A and B', or as a 'product of A and B' or as an 'A B'. If he defines it as 'A and B', the definition will be true of both and yet of neither of them; suppose, e.g. justice to be defined as 'temperance and courage.' For if of two persons each has one of the two only, both and yet neither will be just: for both together have justice, and yet each singly fails to have it. Even if the situation here described does not so far appear very absurd because of the occurrence of this kind of thing in other cases also (for it is quite possible for two men to have a mina between them, though neither of them has it by himself), yet least that they should have contrary attributes surely seems quite absurd; and yet this will follow if the one be temperate and yet a coward, and the other, though brave, be a profligate; for then both will exhibit both justice and injustice: for if justice be temperance and bravery, then injustice will be cowardice and profligacy. In general, too, all the ways of showing that the whole is not the

same as the sum of its parts are useful in meeting the type just described; for a man who defines in this way seems to assert that the parts are the same as the whole. The arguments are particularly appropriate in cases where the process of putting the parts together is obvious, as in a house and other things of that sort: for there, clearly, you may have the parts and yet not have the whole, so that parts and whole cannot be the same.

Topics: If a man has defined an object as 'A B', the first thing to be said is that 'A B' means the same either as 'A and B', or as the 'product of A and B.' for 'honey water' means either the honey and the water, or the 'drink made of honey and water'. If, then, he admits that 'A B' is B' is the same as either of these two things, the same criticisms will apply as have already been given for meeting each of them. Moreover, distinguish between the different senses in which one thing may be said to be ' ' another, and see if there is none of them in which A could be said to exist ' B.' Thus e.g. supposing the expression to mean that they exist either in some identical thing capable of containing them (as e.g. justice and courage are found in the soul), or else in the same place or in the same time, and if this be in no way true of the A and B in question, clearly the definition rendered could not hold of anything, as there is no possible way in which A can exist B'. If, however, among the various senses above distinguished, it be true that A and B are each found in the same time as the other, look and see if possibly the two are not used in the same relation. Thus e.g. suppose courage to have been defined as 'daring with right reasoning': here it is possible that the person exhibits daring in robbery, and right reasoning in regard to the means of health: but he may have 'the former quality the latter' at the same time, and not as yet be courageous! Moreover, even though both be used in the same relation as well, e.g. in relation to medical treatment (for a man may exhibit both daring and right reasoning in respect of medical treatment), still, none the less, not even this combination of 'the one the other 'makes him 'courageous'. For the two must not relate to any casual object that is the same, any more than each to a different object; rather, they must relate to the function of courage, e.g. meeting the perils of war, or whatever is more properly speaking its function than this.

Topics: Some definitions rendered in this form fail to come under the aforesaid division at all, e.g. a definition of anger as 'pain with a consciousness of being slighted'. For what this means to say is that it is because of a consciousness of this sort that the pain occurs; but to occur 'because of' a thing is not the same as to occur ' a thing' in any of its aforesaid senses.

Topics: Again, if he have described the whole compounded as the 'composition' of these things (e.g. 'a living creature' as a 'composition of soul and body'), first of all see whether he has omitted to state the kind of composition, as (e.g.) in a definition of 'flesh' or 'bone' as the 'composition of fire, earth, and air'. For it is not enough to say it is a composition, but you should also go on to define the kind of composition: for these things do not form flesh irrespective of the manner of their composition, but when compounded in one way they form flesh, when in another, bone. It appears, moreover, that neither of the aforesaid substances is the same as a 'composition' at all: for a composition always has a decomposition as its contrary, whereas neither of the aforesaid has any contrary. Moreover, if it is equally probable that every compound is a composition or else that none is, and every kind of living creature, though a compound, is never a composition, then no other compound could be a composition either.

Topics: Again, if in the nature of a thing two contraries are equally liable to occur, and the thing has been defined through the one, clearly it has not been defined; else there will be more than one definition of the same thing; for how is it any more a definition to define it through this one than through the other, seeing that both alike are naturally liable to occur in it? Such is the definition of the soul, if defined as a substance capable of receiving knowledge: for it has a like capacity for receiving ignorance.

Topics: Also, even when one cannot attack the definition as a whole for lack of acquaintance with the whole, one should attack some part of it, if one knows that part and sees it to be incorrectly rendered: for if the part be demolished, so too is the whole definition. Where, again, a definition is obscure, one should first of all correct and reshape it in order to make some part of it clear and get a handle for attack, and then proceed to examine it. For the answerer is bound either to accept the sense as taken by the questioner, or else himself to explain clearly whatever it is that his definition means. Moreover, just as in the assemblies the ordinary practice is to move an emendation of the existing law and, if the emendation is better, they repeal the existing law, so one ought to do in the case of definitions as well: one ought oneself to propose a second definition: for if it is seen to be better, and more indicative of the object defined, clearly the definition already laid down will have been demolished, on the principle that there cannot be more than one definition of the same thing.

Topics: In combating definitions it is always one of the chief elementary principles to take by oneself a happy shot at a definition of the object before one, or to adopt some correctly expressed definition. For one is bound, with the model (as it were) before one's eyes, to discern both any shortcoming in any features that the definition ought to have, and also any superfluous addition, so that one is better supplied with lines of attack.

Topics: As to definitions, then, let so much suffice.

Topics: Such is the number of the commonplace rules that relate to 'sameness'. It is clear from what has been said that all the destructive commonplaces relating to sameness are useful also in questions of definition, as was said before:' for if what is signified by the term and by the expression be not the same, clearly the expression rendered could not be a definition. None of the constructive commonplaces, on the other hand, helps in the matter of definition; for it is not enough to show the sameness of content between the expression and the term, in order to establish that the former is a definition, but a definition must have also all the other characters already announced.

Topics: This then is the way, and these the arguments, whereby the attempt to demolish a definition should always be made. If, on the other hand, we desire to establish one, the first thing to observe is that few if any who engage in discussion arrive at a definition by reasoning: they always assume something of the kind as their starting points—both in geometry and in arithmetic and the other studies of that kind. In the second place, to say accurately what a definition is, and how it should be given, belongs to another inquiry. At present it concerns us only so far as is required for our present purpose, and accordingly we need only make the bare statement that to reason to a thing's definition and essence is quite possible. For if a definition is an expression signifying the essence of the thing and the predicates contained therein ought also to be the only ones which are predicated of the thing in the category of essence; and genera and differentiæ are so predicated in that

category: it is obvious that if one were to get an admission that so and so are the only attributes predicated in that category, the expression containing so and so would of necessity be a definition; for it is impossible that anything else should be a definition, seeing that there is not anything else predicated of the thing in the category of essence.

Topics: That a definition may thus be reached by a process of reasoning is obvious. The means whereby it should be established have been more precisely defined elsewhere, but for the purposes of the inquiry now before us the same commonplace rules serve. For we have to examine into the contraries and other opposites of the thing, surveying the expressions used both as wholes and in detail: for if the opposite definition defines that opposite term, the definition given must of necessity be that of the term before us. Seeing, however, that contraries may be conjoined in more than one way, we have to select from those contraries the one whose contrary definition seems most obvious. The expressions, then, have to be examined each as a whole in the way we have said, and also in detail as follows. First of all, see that the genus rendered is correctly rendered; for if the contrary thing be found in the contrary genus to that stated in the definition, and the thing before you is not in that same genus, then it would clearly be in the contrary genus: for contraries must of necessity be either in the same genus or in contrary genera. The differentiæ, too, that are predicated of contraries we expect to be contrary, e.g. those of white and black, for the one tends to pierce the vision, while the other tends to compress it. So that if contrary differentiæ to those in the definition are predicated of the contrary term, then those rendered in the definition would be predicated of the term before us. Seeing, then, that both the genus and the differentiæ have been rightly rendered, clearly the expression given must be the right definition. It might be replied that there is no necessity why contrary differentiæ should be predicated of contraries, unless the contraries be found within the same genus: of things whose genera are themselves contraries it may very well be that the same differentia is used of both, e.g. of justice and injustice; for the one is a virtue and the other a vice of the soul: 'of the soul', therefore, is the differentia in both cases, seeing that the body as well has its virtue and vice. But this much at least is true, that the differentiæ of contraries are either contrary or else the same. If, then, the contrary differentia to that given be predicated of the contrary term and not of the one in hand, clearly the differentia stated must be predicated of the latter. Speaking generally, seeing that the definition consists of genus and differentiæ, if the definition of the contrary term be apparent, the definition of the term before you will be apparent also: for since its contrary is found either in the same genus or in the contrary genus, and likewise also the differentiæ predicated of opposites are either contrary to, or the same as, each other, clearly of the term before you there will be predicated either the same genus as of its contrary, while, of its differentiæ, either all are contrary to those of its contrary, or at least some of them are so while the rest remain the same; or, vice versa, the differentiæ will be the same and the genera contrary; or both genera and differentiæ will be contrary. And that is all; for that both should be the same is not possible; else contraries will have the same definition.

Topics: Moreover, look at it from the point of view of its inflexions and coordinates. For genera and definitions are bound to correspond in either case. Thus if forgetfulness be the loss of knowledge, to forget is to lose knowledge, and to have forgotten is to have lost knowledge. If, then, any one whatever of these is agreed to, the others must of necessity be agreed to as well. Likewise, also, if destruction is the decomposition of the thing's essence,

then to be destroyed is to have its essence decomposed, and 'destructively' means 'in such a way as to decompose its essence'; if again 'destructive' means 'apt to decompose something's essence', then also 'destruction' means 'the decomposition of its essence'. Likewise also with the rest: an admission of any one of them whatever, and all the rest are admitted too.

Topics: Moreover, look at it from the point of view of things that stand in relations that are like each other. For if 'healthy' means 'productive of health', 'vigorous' too will mean 'productive of vigour', and 'useful' will mean 'productive of good.' For each of these things is related in like manner to its own peculiar end, so that if one of them is defined as 'productive of' that end, this will also be the definition of each of the rest as well.

Topics: Moreover, look at it from the point of and like degrees, in all the ways in which it is possible to establish a result by comparing two and two together. Thus if A defines A better than B defines and B is a definition of so too is A of A. Further, if A's claim to define A is like B's to define B, and B defines B, then A too defines A. This examination from the point of view of greater degrees is of no use when a single definition is compared with two things, or two definitions with one thing; for there cannot possibly be one definition of two things or two of the same thing.

Topics: The most handy of all the commonplace arguments are those just mentioned and those from co-ordinates and inflexions, and these therefore are those which it is most important to master and to have ready to hand: for they are the most useful on the greatest number of occasions. Of the rest, too, the most important are those of most general application: for these are the most effective, e.g. that you should examine the individual cases, and then look to see in the case of their various species whether the definition applies. For the species is synonymous with its individuals. This sort of inquiry is of service against those who assume the existence of Ideas, as has been said before.' Moreover see if a man has used a term metaphorically, or predicated it of itself as though it were something different. So too if any other of the commonplace rules is of general application and effective, it should be employed.

Topics: That it is more difficult to establish than to overthrow a definition, is obvious from considerations presently to be urged. For to see for oneself, and to secure from those whom one is questioning, an admission of premises of this sort is no simple matter, e.g. that of the elements of the definition rendered the one is genus and the other differentia, and that only the genus and differentiæ are predicated in the category of essence. Yet without these premises it is impossible to reason to a definition; for if any other things as well are predicated of the thing in the category of essence, there is no telling whether the formula stated or some other one is its definition, for a definition is an expression indicating the essence of a thing. The point is clear also from the following: It is easier to draw one conclusion than many. Now in demolishing a definition it is sufficient to argue against one point only (for if we have overthrown any single point whatsoever, we shall have demolished the definition); whereas in establishing a definition, one is bound to bring people to the view that everything contained in the definition is attributable. Moreover, in establishing a case, the reasoning brought forward must be universal: for the definition put forward must be predicated of everything of which the term is predicated, and must moreover be convertible, if the definition rendered is to be peculiar to the subject. In overthrowing a view, on the other hand, there is no longer any necessity to show one's point

universally: for it is enough to show that the formula is untrue of any one of the things embraced under the term.

Topics: Further, even supposing it should be necessary to overthrow something by a universal proposition, not even so is there any need to prove the converse of the proposition in the process of overthrowing the definition. For merely to show that the definition fails to be predicated of every one of the things of which the term is predicated, is enough to overthrow it universally: and there is no need to prove the converse of this in order to show that the term is predicated of things of which the expression is not predicated. Moreover, even if it applies to everything embraced under the term, but not to it alone, the definition is thereby demolished.

Topics: The case stands likewise in regard to the property and genus of a term also. For in both cases it is easier to overthrow than to establish. As regards the property this is clear from what has been said: for as a rule the property is rendered in a complex phrase, so that to overthrow it, it is only necessary to demolish one of the terms used, whereas to establish it is necessary to reason to them all. Then, too, nearly all the other rules that apply to the definition will apply also to the property of a thing. For in establishing a property one has to show that it is true of everything included under the term in question, whereas to overthrow one it is enough to show in a single case only that it fails to belong: further, even if it belongs to everything falling under the term, but not to that only, it is overthrown in this case as well, as was explained in the case of the definition. In regard to the genus, it is clear that you are bound to establish it in one way only, viz. by showing that it belongs in every case, while of overthrowing it there are two ways: for if it has been shown that it belongs either never or not in a certain case, the original statement has been demolished. Moreover, in establishing a genus it is not enough to show that it belongs, but also that it belongs as genus has to be shown; whereas in overthrowing it, it is enough to show its failure to belong either in some particular case or in every case. It appears, in fact, as though, just as in other things to destroy is easier than to create, so in these matters too to overthrow is easier than to establish.

Topics: It is clear also that the easiest thing of all is to overthrow a definition. For on account of the number of statements involved we are presented in the definition with the greatest number of points for attack, and the more plentiful the material, the quicker an argument comes: for there is more likelihood of a mistake occurring in a large than in a small number of things. Moreover, the other rules too may be used as means for attacking a definition: for if either the formula be not peculiar, or the genus rendered be the wrong one, or something included in the formula fail to belong, the definition is thereby demolished. On the other hand, against the others we cannot bring all of the arguments drawn from definitions, nor yet of the rest: for only those relating to accidental attributes apply generally to all the aforesaid kinds of attribute. For while each of the aforesaid kinds of attribute must belong to the thing in question, yet the genus may very well not belong as a property without as yet being thereby demolished. Likewise also the property need not belong as a genus, nor the accident as a genus or property, so long as they do belong. So that it is impossible to use one set as a basis of attack upon the other except in the case of definition. Clearly, then, it is the easiest of all things to demolish a definition, while to establish one is the hardest. For there one both has to establish all those other points by reasoning (i.e. that the attributes stated belong, and that the genus rendered is the true

genus, and that the formula is peculiar to the term), and moreover, besides this, that the formula indicates the essence of the thing; and this has to be done correctly.

Topics: One should also, wherever possible, secure the universal premise by a definition relating not to the precise terms themselves but to their co-ordinates; for people deceive themselves, whenever the definition is taken in regard to a co-ordinate, into thinking that they are not making the admission universally. An instance would be, supposing one had to secure the admission that the angry man desires vengeance on account of an apparent slight, and were to secure this, that 'anger' is a desire for vengeance on account of an apparent slight: for, clearly, if this were secured, we should have universally what we intend. If, on the other hand, people formulate propositions relating to the actual terms themselves, they often find that the answerer refuses to grant them because on the actual term itself he is readier with his objection, e.g. that the 'angry man' does not desire vengeance, because we become angry with our parents, but we do not desire vengeance on them. Very likely the objection is not valid; for upon some people it is vengeance enough to cause them pain and make them sorry; but still it gives a certain plausibility and air of reasonableness to the denial of the proposition. In the case, however, of the definition of 'anger' it is not so easy to find an objection.

Topics: There are certain hypotheses upon which it is at once difficult to bring, and easy to stand up to, an argument. Such (e.g.) are those things which stand first and those which stand last in the order of nature. For the former require definition, while the latter have to be arrived at through many steps if one wishes to secure a continuous proof from first principles, or else all discussion about them wears the air of mere sophistry: for to prove anything is impossible unless one begins with the appropriate principles, and connects inference with inference till the last are reached. Now to define first principles is just what answerers do not care to do, nor do they pay any attention if the questioner makes a definition: and yet until it is clear what it is that is proposed, it is not easy to discuss it. This sort of thing happens particularly in the case of the first principles: for while the other propositions are shown through these, these cannot be shown through anything else: we are obliged to understand every item of that sort by a definition. The inferences, too, that lie too close to the first principle are hard to treat in argument: for it is not possible to bring many arguments in regard to them, because of the small number of those steps, between the conclusion and the principle, whereby the succeeding propositions have to be shown. The hardest, however, of all definitions to treat in argument are those that employ terms about which, in the first place, it is uncertain whether they are used in one sense or several, and, further, whether they are used literally or metaphorically by the definer. For because of their obscurity, it is impossible to argue upon such terms; and because of the impossibility of saying whether this obscurity is due to their being used metaphorically, it is impossible to refute them.

Topics: In general, it is safe to suppose that, whenever any problem proves intractable, it either needs definition or else bears either several senses, or a metaphorical sense, or it is not far removed from the first principles; or else the reason is that we have yet to discover in the first place just this—in which of the aforesaid directions the source of our difficulty lies: when we have made this clear, then obviously our business must be either to define or to distinguish, or to supply the intermediate premises: for it is through these that the final conclusions are shown.

Topics: It often happens that a difficulty is found in discussing or arguing a given position because the definition has not been correctly rendered: e.g. 'Has one thing one contrary or many?': here when the term 'contraries' has been properly defined, it is easy to bring people to see whether it is possible for the same thing to have several contraries or not: in the same way also with other terms requiring definition. It appears also in mathematics that the difficulty in using a figure is sometimes due to a defect in definition; e.g. in proving that the line which cuts the plane parallel to one side divides similarly both the line which it cuts and the area; whereas if the definition be given, the fact asserted becomes immediately clear: for the areas have the same fraction subtracted from them as have the sides: and this is the definition of 'the same ratio'. The most primary of the elementary principles are without exception very easy to show, if the definitions involved, e.g. the nature of a line or of a circle, be laid down; only the arguments that can be brought in regard to each of them are not many, because there are not many intermediate steps. If, on the other hand, the definition of the starting–points be not laid down, to show them is difficult and may even prove quite impossible. The case of the significance of verbal expressions is like that of these mathematical conceptions.

Topics: Before maintaining either a thesis or a definition the answerer should try his hand at attacking it by himself; for clearly his business is to oppose those positions from which questioners demolish what he has laid down.

Topics: It is best to know by heart arguments upon those questions which are of most frequent occurrence, and particularly in regard to those propositions which are ultimate: for in discussing these answerers frequently give up in despair. Moreover, get a good stock of definitions: and have those of familiar and primary ideas at your fingers' ends: for it is through these that reasonings are effected. You should try, moreover, to master the heads under which other arguments mostly tend to fall. For just as in geometry it is useful to be practised in the elements, and in arithmetic to have the multiplication table up to ten at one's fingers' ends—and indeed it makes a great difference in one's knowledge of the multiples of other numbers too—likewise also in arguments it is a great advantage to be well up in regard to first principles, and to have a thorough knowledge of premises at the tip of one's tongue. For just as in a person with a trained memory, a memory of things themselves is immediately caused by the mere mention of their loci, so these habits too will make a man readier in reasoning, because he has his premises classified before his mind's eye, each under its number. It is better to commit to memory a premise of general application than an argument: for it is difficult to be even moderately ready with a first principle, or hypothesis.

On Interpretation:

On Interpretation: There can be no affirmation or denial without a verb; for the expressions 'is', 'will be', 'was', 'is coming to be', and the like are verbs according to our definition, since besides their specific meaning they convey the notion of time. Thus the primary affirmation and denial are 'as follows: 'man is', 'man is not'. Next to these, there are the propositions: 'not-man is', 'not-man is not'. Again we have the propositions: 'every man is, 'every man is not', 'all that is not-man is', 'all that is not-man is not'. The same classification holds good with regard to such periods of time as lie outside the present.

On Interpretation: Thus, in the case of those predications which have within them no contradiction when the nouns are expanded into definitions, and wherein the predicates belong to the subject in their own proper sense and not in any indirect way, the individual may be the subject of the simple propositions as well as of the composite. But in the case of that which is not, it is not true to say that because it is the object of opinion, it is; for the opinion held about it is that it is not, not that it is.

Poetics

Poetics: A Sentence or Phrase is a composite significant sound, some at least of whose parts are in themselves significant; for not every such group of words consists of verbs and nouns—'the definition of man,' for example—but it may dispense even with the verb. Still it will always have some significant part, as 'in walking,' or 'Cleon son of Cleon.' A sentence or phrase may form a unity in two ways—either as signifying one thing, or as consisting of several parts linked together. Thus the Iliad is one by the linking together of parts, the definition of man by the unity of the thing signified.

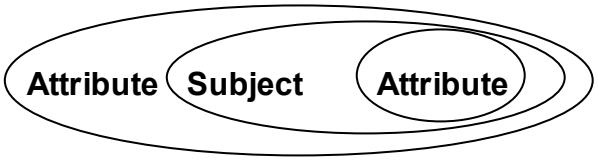
Rhetoric

Rhetoric: Language is composed of nouns and verbs. Nouns are of the various kinds considered in the treatise on Poetry. Strange words, compound words, and invented words must be used sparingly and on few occasions: on what occasions we shall state later. The reason for this restriction has been already indicated: they depart from what is suitable, in the direction of excess. In the language of prose, besides the regular and proper terms for things, metaphorical terms only can be used with advantage. This we gather from the fact that these two classes of terms, the proper or regular and the metaphorical-these and no others-are used by everybody in conversation. We can now see that a good writer can produce a style that is distinguished without being obtrusive, and is at the same time clear, thus satisfying our definition of good oratorical prose. Words of ambiguous meaning are chiefly useful to enable the sophist to mislead his hearers. Synonyms are useful to the poet, by which I mean words whose ordinary meaning is the same, e.g. 'porheueseai' (advancing) and 'badizein' (proceeding); these two are ordinary words and have the same meaning.

Appendix A Definitions

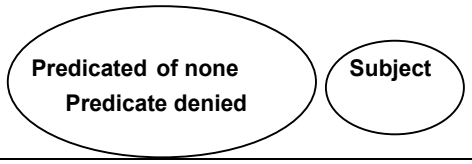
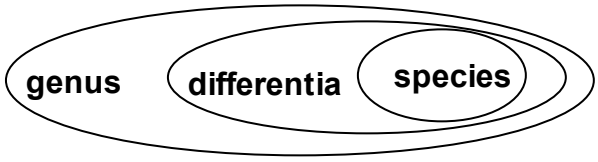
Aristotle was a lover of synonyms, but not even he could keep from making mistakes in using them.

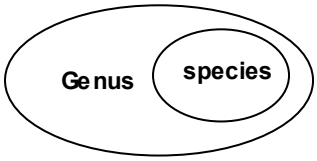
Word	Definition
Accent	On Sophistical Refutations: for the lowering or raising of the voice upon a phrase is thought not to alter its meaning-with any phrase, or not with many..
Accident	Topics: An 'accident' is (i) something which, though it is none of the foregoing—i.e. neither a definition nor a property nor a genus yet belongs to the thing. (predicated of)
Affirmation	On Interpretation: An affirmation is a positive assertion of something about something. ~ every affirmation has an opposite denial, and similarly every denial an opposite affirmation.
Ambiguity	On Sophistical Refutations: duplicity of meaning of terms, duplicity between subject and object, duplicity by tense reference.
Amphiboly	On Sophistical Refutations: Appears to be subject object confusion.
Aporeme	Topics: is an inference that reasons dialectically to a contradiction.
Arguments	On Sophistical Refutations: Of arguments in dialogue form there are four classes: Didactic, Dialectical, Examination-arguments, and Contentious arguments. *Didactic* arguments are those that reason from the principles appropriate to each subject and not from the opinions held by the answerer (for the learner should take things on trust): *dialectical* arguments are those that reason from premises generally accepted, to the contradictory of a given thesis: *examination-arguments* are those that reason from premises which are accepted by the answerer and which any one who pretends to possess knowledge of the subject is bound to know-in what manner, has been defined in another treatise: *contentious* arguments are those that reason or appear to reason to a conclusion from premisses that appear to be generally accepted but are not so.
Argument, aims	On Sophistical Refutations: First we must grasp the number of aims entertained by those who argue as competitors and rivals to the death. These are five in number, *refutation*, *fallacy*, *paradox*, *solecism*, and fifthly to reduce the opponent in the discussion to *babbling*.
Atomic	Posterior Analytics: I call 'atomic' connections or disconnections which involve no intermediate term; since in that case the connection or disconnection will not be mediated by something other than the terms themselves.

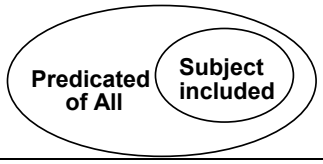
Word	Definition
	Posterior Analytics: If, on the other hand, neither A nor B has a genus and A does not inhere in B, this disconnection must be atomic.
Attribute	Posterior Analytics: 'true in every instance' what is truly predicable of all instances–not of one to the exclusion of others–and at all times; Posterior Analytics: Essential attributes are (1) such as belong to their subject as elements in its essential nature (2) such that, while they belong to certain subjects, the subjects to which they belong are contained in the attribute's own defining formula. Posterior Analytics: An attribute belongs commensurately and universally to a subject when it can be shown to belong to any random instance of that subject and when the subject is the first thing to which it can be shown to belong. Posterior Analytics: for essential attributes are either elements in the essential nature of their subjects, or contain their subjects as elements in their own essential nature. 
Axiom	Posterior Analytics: I call an immediate basic truth of syllogism ~ which the pupil must know if he is to learn anything whatever is an axiom. I call it an axiom because there are such truths and we give them the name of axioms par excellence.
Babbling	On Sophistical Refutations: to constrain him to repeat himself a number of times (This is in reference to a definition, when a word or its synonym is used to define itself. Since one can plug a definition in place of a word, such definitions end up being infinitely recursive.)
Cause	Posterior Analytics: (1) the definable form, (2) an antecedent which necessitates a consequent, (3) the efficient cause, (4) the final cause. Metaphysics: In one of these we mean the substance, i.e. the essence (for the 'why' is reducible finally to the definition, and the ultimate 'why' is a cause and principle); in another the matter or substratum, in a third the source of the change, and in a fourth the cause opposed to this, the purpose and the good (for this is the end of all generation and change). Note: 1) What is the primary cause of all being. The cause of the primary elements? 2) What is the cause of the change of things,

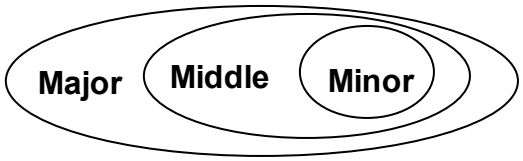
Word	Definition
	i.e., how to things interact.
Coincidental	Posterior Analytics: Things, then, not predicated of a subject I call essential; things predicated of a subject I call accidental or 'coincidental'.
Complete	Metaphysics: (1) that outside which it is not possible to find any, even one, of its parts;
Convertible	Prior Analytics: e.g. if no pleasure is good, then no good will be pleasure This is expressed mathematically as – (A = B) = – (B = A) in other words "no" is not an adjectival to either term, and is really another means of expressing (A ≠ B) = (B ≠ A). It is a common mistake of logicians and grammarians to mistake the "no" as being adjectival, that is a quantifier.
Contradiction	Posterior Analytics: A contradiction is an opposition which of its own nature excludes a middle. The part of a contradiction which conjoins a predicate with a subject is an affirmation; the part disjoining them is a negation. Metaphysics: But on the other hand there cannot be an intermediate between contradictories, but of one subject we must either affirm or deny any one predicate.
Definition	Posterior Analytics: Definition is a 'thesis' or a 'laying something down' Topics: A 'definition' is a phrase signifying a thing's essence. It is rendered in the form either of a phrase in lieu of a term, or of a phrase in lieu of another phrase. ~ Argument about definitions is mostly concerned with questions of sameness and difference. Topics: The definition consists of genus and differentiæ. Topics: Or again, people sometimes define night as a 'shadow on the earth', or an earthquake as a movement of the earth', or a cloud as 'condensation of the air', or a wind as a 'movement of the air'; whereas they ought to specify as well quantity, quality, place, and cause. Likewise, also, in other cases of the kind: for by omitting any differentiæ whatever he fails to state the essence of the term. Topics: Speaking generally, in definitions of this sort it happens that what the definer defines is in a sense more than one thing: for in defining knowledge, a man in a sense defines ignorance as well, and likewise also what has knowledge and what lacks it, and what it is to know and to be ignorant. For if the first be made clear, the others become in a certain sense clear as well. Topics: consists of genus and differentiæ Posterior Analytics: Since definition is said to be the statement of a thing's nature, obviously one kind of definition will be a

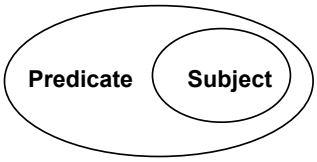
Word	Definition
	statement of the meaning of the name, or of an equivalent nominal formula. Posterior Analytics: definition is a formula exhibiting the cause of a thing's existence. Posterior Analytics: definition is (a) an indemonstrable statement of essential nature, or (b) a syllogism of essential nature differing from demonstration in grammatical form, or (c) the conclusion of a demonstration giving essential nature. Metaphysics: in definition also this is first; for in the definition of each term the definition of its substance must be present. Metaphysics: Clearly, then, only substance is definable. Metaphysics: Since a definition is a formula, and every formula has parts, and as the formula is to the thing, so is the part of the formula to the part of the thing, Metaphysics: But only the parts of the form are parts of the formula, and the formula is of the universal; for 'being a circle' is the same as the circle, and 'being a soul' the same as the soul. But when we come to the concrete thing, e.g. this circle, i.e. one of the individual circles, whether perceptible or intelligible (I mean by intelligible circles the mathematical, and by perceptible circles those of bronze and of wood),–of these there is no definition, but they are known by the aid of intuitive thinking or of perception; and when they pass out of this complete realization it is not clear whether they exist or not; but they are always stated and recognized by means of the universal formula. But matter is unknowable in itself. And some matter is perceptible and some intelligible, perceptible matter being for instance bronze and wood and all matter that is changeable, and intelligible matter being that which is present in perceptible things not quâ perceptible, i.e. the objects of mathematics. Metaphysics: Another question is naturally raised, viz. what sort of parts belong to the form and what sort not to the form, but to the concrete thing. Yet if this is not plain it is not possible to define any thing; for definition is of the universal and of the form.
Definition-Equimembral	Topics: A definition is said to be equimembral with the term defined when the number of the elements compounded in the latter is the same as the number of nouns and verbs in the definition. For the exchange in such cases is bound to be merely one of term for term, in the case of some if not of all, seeing that there are no more terms used now than formerly; whereas in a definition terms ought to be rendered by phrases, if possible in every case, or if not, in the majority. For at that rate, simple objects too could be defined by merely calling them by a different name, e.g. 'cloak' instead of 'doublet'.

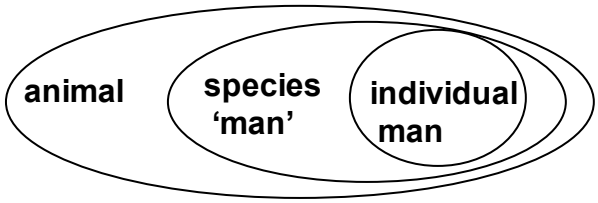
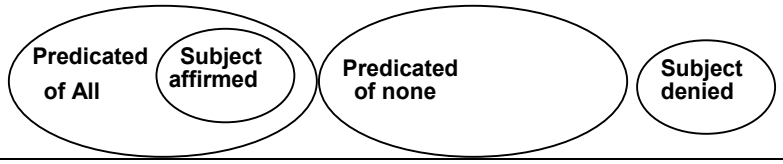
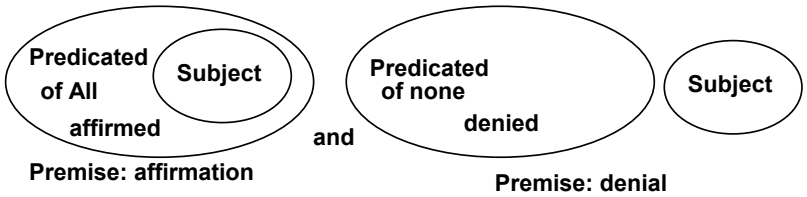
Word	Definition
Demonstration	Posterior Analytics: By demonstration I mean a syllogism productive of scientific knowledge, a syllogism, that is, the grasp of which is *eo ipso* such knowledge. Posterior Analytics: demonstration is an inference from necessary premises.
Denial	On Interpretation: a denial a negative assertion of something about something. A is not B. 
Dialectic	Topics: for dialectic is a process of criticism wherein lies the path to the principles of all inquiries
Dialectical Problem	Topics: A dialectical problem is a subject of inquiry that contributes either to choice and avoidance, or to truth and knowledge, and that either by itself, or as a help to the solution of some other such problem. It must, moreover, be something on which either people hold no opinion either way, or the masses hold a contrary opinion to the philosophers, or the philosophers to the masses, or each of them among themselves.
Dialectical Proposition	Topics: A dialectical proposition consists in asking something that is held by all men or by most men or by the philosophers, i.e. either by all, or by most, or by the most notable of these, provided it be not contrary to the general opinion. Dialectical propositions also include views which are like those generally accepted; also propositions which contradict the contraries of opinions that are taken to be generally accepted, and also all opinions that are in accordance with the recognized arts.
Dialectical Reasoning	Posterior Analytics: two forms of, syllogistic and inductive
Differentia	Topics: the general view is that the differentia always expresses a quality. Topics: For the differentia is never an accidental attribute, any more than the genus is: for the differentia of a thing cannot both belong and not belong to it. Topics: for the differentiæ are predicates of the species. Topics: for the differentia ought to be posterior to the genus, but prior to the species. 

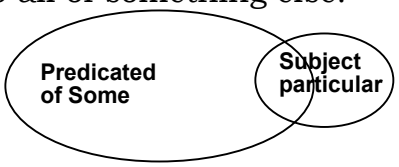
Word	Definition
	Topics: each of the differentiæ imports its own genus, e.g. 'walking' and 'biped' import with them the genus 'animal'.
Epichireme	Topics: is a dialectical inference:
Essence	Topics: We usually distinguish the expression that is proper to the essence of each particular thing by means of the differentiæ that are proper to it. Topics: Likewise, also, in other cases of the kind: for by omitting any differentiæ whatever he fails to state the essence of the term. Metaphysics: essence is said to be the substance of each thing. Metaphysics: Each thing itself, then, and its essence are one and the same in no merely accidental way, as is evident both from the preceding arguments and because to know each thing, at least, is just to know its essence, so that even by the exhibition of instances it becomes clear that both must be one.
Essential	Posterior Analytics: that is essential which is not predicated of a subject other than itself: ~ Things, then, not predicated of a subject I call essential; things predicated of a subject I call accidental or 'coincidental'.
Fallacy	On Sophistical Refutations
False	Metaphysics: We call things false in this way, then,–either because they themselves do not exist, or because the appearance which results from them is that of something that does not exist.
Genus, genera, generic	Topics: A 'genus' is what is predicated in the category of essence of a number of things exhibiting differences in kind. We should treat as predicates in the category of essence all such things as it would be appropriate to mention in reply to the question, 'What is the object before you?' Topics: The genus is predicated of all the members of the same species.  Topics: The species partake of the genera, but not the genera of the species: for the species admits the definition of the genus, whereas the genus does not admit that of the species. Topics: 'True of S' is the only description used of the genus in relation to its species.~For the genus is always predicated of its species synonymously. Topics: For a genus is always divided by differentiæ that are co-ordinate members of a division, as, for instance, by the terms 'walking', 'flying', 'aquatic', and 'biped'. Topics: For the differentia is never an accidental attribute, any

Word	Definition
	more than the genus is: for the differentia of a thing cannot both belong and not belong to it. Topics: for the one is the genus and the other the differentia, and the genus is always the most familiar term of all; Metaphyics: Now, since the so-called genera are universal and indivisible (for there is no definition of them), some say the genera are elements, and more so than the differentia, because the genus is more universal; for where the differentia is present, the genus accompanies it, but where the genus is present, the differentia is not always so.
Hypothesis	Posterior Analytics: If a thesis assumes one part or the other of an enunciation, i.e. asserts either the existence or the non-existence of a subject, it is a hypothesis;
Impossible	Metaphysics: is that of which the contrary is of necessity true
Inclusion Or Non-Inclusion	Prior Analytics: That one term should be included in another as in a whole is the same as for the other to be predicated of all of the first. 
Induction	Topics: Induction should proceed from individual cases to the universal and from the known to the unknown; and the objects of perception are better known, to most people if not invariably. Posterior Analytics: induction exhibiting the universal as implicit in the clearly known particular.
Inheritance	Posterior Analytics: essential attributes must inhere in their subjects of necessity. Posterior Analytics: I term 'commensurately universal' an attribute which belongs to every instance of its subject, and to every instance essentially and as such; from which it clearly follows that all commensurate universals inhere necessarily in their subjects. (This is Plato's Absolute. Every member of a class inherits the defining characteristic of that class, the class itself is the commensurate universal of that characteristic, meaning that it is the absolute measure, the upper bound or upper limit.)
Intuition	Posterior Analytics: by rational intuition I mean an originative source of scientific knowledge–nor of indemonstrable knowledge, which is the grasping of the immediate premise.
Knowledge	Metaphysics: (a) there is knowledge of each thing only when we know its essence.
Knowledge, Unqualified	Posterior Analytics: We suppose ourselves to possess unqualified scientific knowledge of a thing, as opposed to knowing it in the

Word	Definition
Scientific	accidental way in which the sophist knows, when we think that we know the cause on which the fact depends, as the cause of that fact and of no other, and, further, that the fact could not be other than it is.
Limit	Metaphysics: (1) the last point of each thing, i.e. the first point beyond which it is not possible to find any part, and the first point within which every part is;
Magnitude	Metaphysics: 'Quantum' means that which is divisible into two or more constituent parts of which each is by nature a 'one' and a 'this'. A quantum is a plurality if it is numerable, a magnitude if it is a measurable. 'Plurality' means that which is divisible potentially into non-continuous parts, 'magnitude' that which is divisible into continuous parts; of magnitude, that which is continuous in one dimension is length; in two breadth, in three depth. Of these, limited plurality is number, limited length is a line, breadth a surface, depth a solid.
Major, Minor, Middle	Posterior Analytics: the major is predicated of the whole of the middle and the middle of the whole of the minor  This makes the predicate the major term, not the subject.
Necessary	Posterior Analytics: Since the object of pure scientific knowledge cannot be other than it is, the truth obtained by demonstrative knowledge will be necessary.
Noun	On Interpretation: By a noun we mean a sound significant by convention, which has no reference to time, and of which no part is significant apart from the rest.
Part	Metaphysics: (1) (a) that into which a quantum can in any way be divided;
Philosopheme	Topics: is a demonstrative inference:
Philosophy, First and Second.	Metaphysics: We answer that if there is no substance other than those which are formed by nature, natural science will be the first science; but if there is an immovable substance, the science of this must be prior and must be first philosophy, and universal in this way, because it is first. And it will belong to this to consider being *quâ* being–both what it is and the attributes which belong to it quâ being. Metaphysics: For it is for the sake of this that we are trying to determine the nature of perceptible substances as well, since in a sense the inquiry about perceptible substances is the work of physics, i.e. of second philosophy; for the physicist must come to

Word	Definition
	know not only about the matter, but also about the substance expressed in the formula, and even more than about the other. And in the case of definitions, how the elements in the formula are parts of the definition, and why the definition is one formula (for clearly the thing is one, but in virtue of what is the thing one, although it has parts?),–this must be considered later.
Physics	Metaphysics: For it is for the sake of this that we are trying to determine the nature of perceptible substances as well, since in a sense the inquiry about perceptible substances is the work of physics, i.e. of second philosophy; for the physicist must come to know not only about the matter, but also about the substance expressed in the formula, and even more than about the other. And in the case of definitions, how the elements in the formula are parts of the definition, and why the definition is one formula (for clearly the thing is one, but in virtue of what is the thing one, although it has parts?),–this must be considered later.
plurality	Metaphysics: A quantum is a plurality if it is numerable 'Quantum' means that which is divisible into two or more constituent parts of which each is by nature a 'one' and a 'this'. A quantum is a plurality if it is numerable, a magnitude if it is a measurable. 'Plurality' means that which is divisible potentially into non-continuous parts, 'magnitude' that which is divisible into continuous parts; of magnitude, that which is continuous in one dimension is length; in two breadth, in three depth. Of these, limited plurality is number, limited length is a line, breadth a surface, depth a solid.
Potency	Metaphysics: (1) a source of movement or change,(2) the source of a thing's being moved by another thing or by itself quâ other. (3) The capacity of performing this well or according to intention;(4) in the case of passivity—(5) The states in virtue of which things are absolutely impassive or unchangeable, or not easily changed for the worse, are called potencies; Metaphysics: Therefore the proper definition of the primary kind of potency will be 'a source of change in another thing or in the same thing quâ other'.
Predicate	Categories: for the greater class is predicated of the lesser, so that all the differentiæ of the predicate will be differentiæ also of the subject.  Categories: Everything except primary substances is either predicable of a primary substance or present in a primary

Word	Definition
	substance. This becomes evident by reference to particular instances which occur. 'Animal' is predicated of the species 'man', therefore of the individual man, for if there were no individual man of whom it could be predicated, it could not be predicated of the species 'man' at all.  Categories: for the species is to the genus as subject is to predicate, since the genus is predicated of the species, whereas the species cannot be predicated of the genus. Prior Analytics: That one term should be included in another as in a whole is the same as for the other to be predicated of all of the first. PRIOR1001 Posterior Analytics: we assume that every predicate can be either truly affirmed or truly denied of any subject
Predicating One Term Of All, Or None, Of Another	Prior Analytics: And we say that one term is predicated of all of another, whenever no instance of the subject can be found of which the other term cannot be asserted: 'to be predicated of none' must be understood in the same way. 
Premise	Prior Analytics: A premise then is a sentence affirming or denying one thing of another. This is either universal or particular or indefinite.  Posterior Analytics: premises of demonstrated knowledge must be true, primary, immediate, better known than and prior to the conclusion, which is further related to them as effect to cause. Posterior Analytics: I identify primary premise and basic truth. Prior Analytics: By indefinite that something does or does not belong to something else, without any mark to show whether it is universal or particular.

Word	Definition
	Topics: By necessary premises are meant those through which the actual reasoning is constructed. Those which are secured other than these are of four kinds; they serve either inductively to secure the universal premise being granted, or to lend weight to the argument, or to conceal the conclusion, or to render the argument more clear. Prior Analytics: By particular that something belongs to some or not to some or not to all of something else.  Prior Analytics: By universal I mean the statement that something belongs to all or none of something else.
Prime mover	Metaphysics: the prime mover also is a beginning absolutely.
Property	Topics: A 'property' is a predicate which does not indicate the essence of a thing, but yet belongs to that thing alone, and is predicated convertibly of it. ~ For no one calls anything a 'property' which may possibly belong to something else.
Proposition	On Interpretation: Yet every sentence is not a proposition; only such are propositions as have in them either truth or falsity. On Interpretation: 1 The first class of simple propositions is the simple affirmation, the next, the simple denial; all others are only one by conjunction. 2 Every proposition must contain a verb or the tense of a verb. The phrase which defines the species 'man', if no verb in present, past, or future time be added, is not a proposition. It may be asked how the expression 'a footed animal with two feet' can be called single; for it is not the circumstance that the words follow in unbroken succession that effects the unity. This inquiry, however, finds its place in an investigation foreign to that before us. 3 We call those propositions single which indicate a single fact, or the conjunction of the parts of which results in unity: those propositions, on the other hand, are separate and many in number, which indicate many facts, or whose parts have no conjunction. 4 Let us, moreover, consent to call a noun or a verb an expression only, and not a proposition, since it is not possible for a man to speak in this way when he is expressing something, in such a way as to make a statement, whether his utterance is an answer to a question or an act of his own initiation.
Proposition, Immediate	Posterior Analytics: An immediate proposition is one which has no other proposition prior to it. A proposition is either part of an

Word	Definition
	enunciation, i.e. it predicates a single attribute of a single subject.
Quality	Topics: is generally held to be the function of the differentia. ~ the general view is that the differentia always expresses a quality. Metaphysics: 'Quality' means (1) the differentia of the essence, (2) there is another sense in which it applies to the unmovable objects of mathematics, the sense in which the numbers have a certain quality, e.g. the composite numbers which are not in one dimension only (3) All the modifications of substances that move (e.g. heat and cold, whiteness and blackness, heaviness and lightness, and the others of the sort) in virtue of which, when they change, bodies are said to alter. (4) Quality in respect of virtue and vice, and in general, of evil and good.
Quantum	Metaphysics: that which is divisible into two or more constituent parts of which each is by nature a 'one' and a 'this'. A quantum is a plurality if it is numerable, a magnitude if it is a measurable.
Refutation	On Sophistical Refutations: refutation is reasoning involving the contradictory of the given conclusion. On Sophistical Refutations: There are two styles of refutation: for some depend on the language used, while some are independent of language. Those ways of producing the false appearance of an argument which depend on language are six in number: they are *ambiguity*, *amphiboly*, *combination*, *division* of words, *accent*, *form of expression*.
Relative	Metaphysics: (1) as double to half, and treble to a third, and in general that which contains something else many times to that which is contained many times in something else, and that which exceeds to that which is exceeded; (2) as that which can heat to that which can be heated, and that which can cut to that which can be cut, and in general the active to the passive; (3) as the measurable to the measure, and the knowable to knowledge, and the perceptible to perception.
Rhetorical Arguments	Posterior Analytics: is in principle the same (as dialectical), since they use either example, a kind of induction, or enthymeme, a form of syllogism.
Same	Topics: is most used in a sense agreed on by every one when applied to what is numerically one.
Science	Posterior Analytics: For indeed every demonstrative science has three elements: (1) that which it posits, the subject genus whose essential attributes it examines; (2) the so-called axioms, which are primary premises of its demonstration; (3) the attributes, the meaning of which it assumes.
Sentence	On Interpretation: A sentence is a significant portion of speech, some parts of which have an independent meaning, that is to say, as an utterance, though not as the expression of any positive

Word	Definition
	judgement. 2 Every sentence has meaning, not as being the natural means by which a physical faculty is realized, but, as we have said, by convention. Yet every sentence is not a proposition; only such are propositions as have in them either truth or falsity.
Solecism	On Sophistical Refutations: i.e. to make the answerer, in consequence of the argument, to use an ungrammatical expression; or, as a last resort, to make him repeat himself..
Sophism	Topics: is a contentious inference:
Species	Topics: a specific differentia, if added to the genus, always makes a species.
Subaltern	1·. A subordinate.
Substance	Metaphysics: Therefore that which is primarily, i.e. not in a qualified sense but without qualification, must be substance. Metaphysics: Now there are several senses in which a thing is said to be first; yet substance is first in every sense–(1) in definition, (2) in order of knowledge, (3) in time. For (3) of the other categories none can exist independently, but only substance. And (1) in definition also this is first; for in the definition of each term the definition of its substance must be present. And (2) we think we know each thing most fully, when we know what it is, e.g. what man is or what fire is, rather than when we know its quality, its quantity, or its place; since we know each of these predicates also, only when we know what the quantity or the quality is. Metaphysics: We have now outlined the nature of substance, showing that it is that which is not predicated of a stratum, but of which all else is predicated. Metaphysics: essence is said to be the substance of each thing.
Substratum	Metaphysics: which we call its matter
Syllogism	Prior Analytics: A syllogism is discourse in which, certain things being stated, something other than what is stated follows of necessity from their being so. I mean by the last phrase that they produce the consequence, and by this, that no further term is required from without in order to make the consequence necessary. Posterior Analytics: syllogism assuming an audience that accepts its premisses Posterior Analytics: in syllogism the unit is an immediate premise. Posterior Analytics: In syllogisms, then, which prove the inherence of an attribute, nothing falls outside the major term.
Syllogism–Imperfect	Prior Analytics: a syllogism is imperfect, if it needs either one or more propositions, which are indeed the necessary consequences of the terms set down, but have not been expressly stated as

Word	Definition
	premises.
Syllogism–Perfect	Prior Analytics: I call that a perfect syllogism which needs nothing other than what has been stated to make plain what necessarily follows.
Synonym	Topics: For terms whose definition corresponding their common name is one and the same, are synonymous;
Term	Prior Analytics: I call that a term into which the premise is resolved, i.e. both the predicate and that of which it is predicated, 'being' being added and 'not being' removed, or vice versa.
Thesis	Topics: A 'thesis' is a supposition of some eminent philosopher that conflicts with the general opinion; e.g. the view that contradiction is impossible, as Antisthenes said; or the view of Heraclitus that all things are in motion; or that Being is one, as Melissus says. ~ A 'thesis' also is a problem, though a problem is not always a thesis, inasmuch as some problems are such that we have no opinion about them either way. Posterior Analytics: I call an immediate basic truth of syllogism a 'thesis' when, though it is not susceptible of proof by the teacher, yet ignorance of it does not constitute a total bar to progress on the part of the pupil:
Truth, basic	Posterior Analytics: A 'basic truth' in a demonstration is an immediate proposition. An immediate proposition is one which has no other proposition prior to it. A proposition is either part of an enunciation, i.e. it predicates a single attribute of a single subject.
Universal	Topics: It is by means of an induction of individuals in cases that are alike that we claim to bring the universal in evidence. Posterior Analytics: I term 'commensurately universal' an attribute which belongs to every instance of its subject, and to every instance essentially and as such; from which it clearly follows that all commensurate universals inhere necessarily in their subjects.
Verb	On Interpretation: 1 A verb is that which, in addition to its proper meaning, carries with it the notion of time. ~ 3 Moreover, a verb is always a sign of something said of something else, i.e. of something either predicable of or present in some other thing. On Interpretation: Verbs in and by themselves are substantival and have significance, for he who uses such expressions arrests the hearer's mind, and fixes his attention; but they do not, as they stand, express any judgement, either positive or negative.
Whole	Metaphysics: (1) that from which is absent none of the parts

Appendix B
An Eight-Fold Path

One of the reasons that it is often difficult to remember or even follow Aristotle is that the model of what a sentence *is* is confused and contradictory in writings. Secondly he was a synonym freak and if one wants to try and follow him, one should build a table of synonyms. When it came to reasoning, Aristotle could not hold a candle to Plato. However, since Aristotle showed about the same degree of mental confusion as the common man, he became popular. However, Plato is often misread—for example in the Republic, his task was to put the most just people in the most unjust circumstances, and everyone ends up calling it his utopia. Wow, lots of poor readers. Reading Aristotle, I would have guessed he would misread it, he did not have to prove it.

The human bodies acquisition centers, those that support life by abstracting from things in the environment in order to sustain and promote this organism called man, abstract from a thing, either that things form, such as the ocular system, or that things material, such as the digestive system.

We name these abstractions. These abstractions are not things.

Now, suppose something stands before us, we abstract its form, and give that form a name. We abstract that things material, and we give that material a name. Now it stands to reason that the name of a thing is equal to the names of its various forms and material differences. A thing is material in form.

And so we have some consequences (I shaved them down for esthetics).

1) Definition is the preservation of the social convention that associates the name of a thing with the names of its various forms and material differences.

2) Predication is the inverse function of abstraction.

3) There are then two primitive naming conventions, 1) names of things, 2) names of things composed of the names of a things forms and material differences.

4) There are three primitive categories of names, names of things, names of forms, names of material differences.

5) There is one primitive form of unit sentences; Name = form and material, and two derivative forms Name = Name, Form and material = form and material.

Example: Red is a color. John is red. A color is a sensation.

It is clear that only one of those sentence types contain predicates (the first), the other two are synonyms. When Aristotle realizes the sentence type, he says that the terms are predicated synonymously, but I don't think you can call it predication since the structure is not abstractive, but equated.

6) Of the three categories of names, only one is defined, the other two are abstracted.

7) If form is abstracted, material must be supplied to make a thing. If material is abstracted then form must be applied to make a thing.

8) Description is a means by which to construct or lead one to a thing by which abstractions may be made in order that the naming convention may be preserved.

It would take a very exceptional reader to understand the fallout of these facts in regard to a long history of popular sages—dogmas and doctrines. However, it is upon this foundation that one can begin to construct a grammar, by determining how these names can and cannot be added together into common discourse containing many words. However, today, words are not truly conventional—perhaps when literacy is taken seriously, they will be.

Equality

Now equality is of two kinds, numerical and proportional; by the first I mean sameness or equality in number or size; by the second, equality of ratios. Politics, Aristotle, Ross.

Function

"Everything which has a function exists for its function." *On the Heavens*, by Aristotle, W. D. Ross.

Matter, Form and Purpose

10. See what things are in themselves, dividing them into matter, form and purpose. the Meditations Of Marcus Aurelius Antoninus.

The same thing may have all the kinds of causes, such as the moving cause of a house is the art or the builder, the final cause is the function it fulfils, the matter is earth and stones, and the form is the definition. Metaphysics by Aristotle.

But, leaving these arguments, let us insist on this, that it is not the same thing to change in quantity and in quality. Grant that in quantity a thing is not constant; still it is in respect of its form that we know each thing. Metaphysics by Aristotle.

Wherever this is so, then, the ultimate subject is a substance; but when this is not so but the predicate is a form and a ‘this’, the ultimate subject is matter and material substance.

No Better Than A Vegetable

> Thus, we assume that every predicate can be either truly affirmed or truly denied of any subject, and that 'triangle' means so and so; as regards 'unit' we have to make the double assumption of the meaning of the word and the existence of the thing.

And Aristotle has something to say if someone does not understand the principle.

> "There are some who, as we said, both themselves assert that it is possible for the same thing to be and not to be, and say that people can judge this to be the case. And among others many writers about nature use this language. But we have now posited that it is impossible for anything at the same time to be and not to be, and by this means have shown that this is the most indisputable of all principles.-Some indeed demand that even this shall be demonstrated, but this they do through want of education, for not to know of what things one should demand demonstration, and of what one should not, argues want of education. For it is impossible that there should be demonstration of absolutely everything (there would be an infinite regress, so that there would still be no demonstration); but if there are things of which one should not demand demonstration, these persons could not say what principle they maintain to be more self-evident than the present one.
>
> We can, however, demonstrate negatively even that this view is impossible, if our opponent will only say something; and if he says nothing, it is absurd to seek to give an account of our views to one who cannot give an account of anything, in so far as he cannot do so. For such a man, as such, is from the start no better than a vegetable." *Metaphysics* by Aristotle, Ross

Parts of a Thing, or Definition of a Thing

> 'A part' may be a part either of the form (i.e. of the essence), or of the compound of the form and the matter, or of the matter itself.
> ***Metaphysics*** by Aristotle.

"Therefore one kind of substance can be defined and formulated, i.e. the composite kind, whether it be perceptible or intelligible; but the *primary parts* of which this consists cannot be defined, since a definitory formula predicates some thing of some thing, and therefore, one part of the definition must play the part of *matter* and the other that of *form*." *Metaphysics* by Aristotle. W. D. Ross.

"Therefore ~~one kind of substance~~ [*a thing*] can be defined and formulated, ~~i.e.~~ ~~the~~ [*for it is*] composite ~~kind~~, whether it be perceptible or intelligible [sometimes called *concrete* and *abstract*]; but the primary parts of which this consists cannot be defined, since a definitory formula predicates some thing of some thing, ~~and~~ therefore, one part of the ~~definition~~ [*predicate*] must play the part of *matter* and the other that of *form*." *Metaphysics* by Aristotle. W. D. Ross.

Perceptible and Intelligible

But when we come to the concrete thing, e.g. this circle, i.e. one of the individual circles, whether perceptible or intelligible (I mean by intelligible circles the mathematical, and by perceptible circles those of bronze and of wood),—of these there is no definition, but they are known by the aid of intuitive thinking or of perception; and when they pass out of this complete realization it is not clear whether they exist or not; but they are always stated and recognized by means of the universal formula. ***Metaphysics*** by Aristotle.

Predication

this is just what we mean by the individual the numerically one, and by the universal we mean that which is predicable of the individuals. Metaphysics by Aristotle

Wherever this is so, then, the ultimate subject is a substance; but when this is not so but the predicate is a form and a 'this', the ultimate subject is matter and material substance. Metaphysics by Aristotle.

Sense Perception

"It is also clear that the loss of any one of the senses entails the loss of a corresponding portion of knowledge, and that, since we learn either by induction or by demonstration, this knowledge cannot be acquired. Thus demonstration develops from universals, induction from particulars; but since it is possible to familiarize the pupil with even the so-called mathematical abstractions only through induction—i.e. only because each subject genus possesses, in virtue of a determinate mathematical character, certain properties which can be treated as separate even though they do not exist in isolation—it is consequently impossible to come to grasp universals except through induction. But induction is impossible for those who have not sense-perception. For it is sense-perception alone which is adequate for grasping the particulars: they cannot be objects of scientific knowledge, because neither can universals give us knowledge of them without induction, nor can we get it through induction without sense-perception." *Posterior Analytics*, Aristotle, Ross

Simple colors are the proper colors of the elements, i.e. of fire, air, water, and earth. *On Color*, by Aristotle

A Two Element Metaphysics.

Including Zeno, Parmenides, Socrates, Plato, Euclid, and Aristotle, many ancient philosophers were working on a *Two-Element Metaphysics*. It was, however, never formally named as such. It is by gathering the similar idea in the many examples that one derives the name. Euclid simply named it *The Elements*. I suspect he assumed the knowledge of it.

> "Further, since the ***matter*** exists, because it is ungenerated, it is a fortiori reasonable that the substance or essence, that which the matter is at any time coming to be, should exist; for if neither essence nor matter is to be, nothing will be at all, and since this is impossible there must be something besides the concrete thing, viz. the ***shape*** or ***form***.
>
> But again (B) if we are to suppose this, it is hard to say in which cases we are to suppose it and in which not. For evidently it is not possible to suppose it in all cases; we could not suppose that there is a house besides the particular houses.—Besides this, will the substance of all the individuals, such as of all men, be one? This is paradoxical, for all the things whose substance is one are one. But are the substances many and different? This also is unreasonable.—At the same time, how does the *matter* become each of the *individuals*, and ***how is the concrete thing these two elements***?" *Metaphysics*, by Aristotle.

> "(By the matter I mean, for instance, the bronze, by the shape the pattern of its form, and by the compound of these the statue, the concrete whole.)" *Metaphysics*, by Aristotle.

> "For we make it out of brass and the sphere; we bring the form into this particular matter, and the result is a brazen sphere." Metaphysics, by Aristotle.

> "For the product will always have to be divisible, and one part must be this and another that; I mean the one must be matter and the other form." *Metaphysics*, by Aristotle.

What is soul?

There are two distinctive peculiarities by reference to which we characterize the soul—

(1) local movement and

(2) thinking, understanding, and perceiving. *On the Soul*, Aristotle, J. A. Smith

Bible Hebrew Letters

Letter Name	Sound	Number value	
Aleph	A	1	Ox, or Leader
Beth	B	2	A House
Gimel	G	3	A Camel
Daleth	D	4	A door.
He	H	5	She, or behold
Vav	V	6	a hook, or a nail
Zayin	Z	7	armour
Heth	H	8	a hedge
Teth	T	9	a serpent, or a scroll
Yod	Y	10	A hand shut
Kaph	K	20	a hollow hand, cup
Lamed	L	30	ox-goad
Mem	M	40	a stain, or spot
Nun	N	50	a fish, or a snake
Samekh	S	60	a basis, or support
Ayin	‘	70	an eye, or a well
Pe	P	80	a lip, or mouth
Tsade	Ts	90	a hunter’s pole
Qoph	Q	100	an ape
Resh	R	200	a head
Shin	Sh	300	a tooth
Tav	T	400	a cross, or mark

6, 60, 200, 400,

Nail, foundation, head, mark.

To fix the foundation of Grammar in the mind.
or
To fix, in the mind, the art of Grammar.

Respect Persons.

Deuteronomy 1:17 Ye shall not respect persons in judgment; but ye shall hear the small as well as the great; ye shall not be afraid of the face of man; for the judgment is God's: and the cause that is too hard for you, bring it unto me, and I will hear it.

Deuteronomy 16:17 Ye shall not respect persons in judgment; but ye shall hear the small as well as the great; ye shall not be afraid of the face of man; for the judgment is God's: and the cause that is too hard for you, bring it unto me, and I will hear it.

2 Chronicles 19: 7 Wherefore now let the fear of the LORD be upon you; take heed and do it: for there is no iniquity with the LORD our God, nor respect of persons, nor taking of gifts.

Proverbs 24: 23 These things also belong to the wise. It is not good to have respect of persons in judgment.

Proverbs 28:21 To have respect of persons is not good: for for a piece of bread that man will transgress.

Romans 2: 11 For there is no respect of persons with God.

Ephesians 6: 9 And, ye masters, do the same things unto them, forbearing threatening: knowing that your Master also is in heaven; neither is there respect of persons with him.

Colossians 3:25 But he that doeth wrong shall receive for the wrong which he hath done: and there is no respect of persons.

James 2: 9 But if ye have respect to persons, ye commit sin, and are convinced of the law as transgressors.

Seven Life Support Systems of Man

Isa 4:1 And in that day seven women shall take hold of one man, saying, We will eat our own bread, and wear our own apparel: only let us be called by thy name, to take away our reproach.

Zec 3:9 For behold the stone that I have laid before Joshua; upon one stone [shall be] seven eyes: behold, I will engrave the graving thereof, saith the LORD of hosts, and I will remove the iniquity of that land in one day.

Zec 4:2 And said unto me, What seest thou? And I said, I have looked, and behold a candlestick all [of] gold, with a bowl upon the top of it, and his seven lamps thereon, and seven pipes to the seven lamps, which [are] upon the top thereof:

Zec 4:10 For who hath despised the day of small things? for they shall rejoice, and shall see the plummet in the hand of Zerubbabel [with] those seven; they [are] the eyes of the LORD, which run to and fro through the whole earth.

Mar 16:9 Now when [Jesus] was risen early the first [day] of the week, he appeared first to Mary Magdalene, out of whom he had cast seven devils.

Luk 8:2 And certain women, which had been healed of evil spirits and infirmities, Mary called Magdalene, out of whom went seven devils,

Rev 1:13 And in the midst of the seven candlesticks [one] like unto the Son of man, clothed with a garment down to the foot, and girt about the paps with a golden girdle.

Rev 1:16 And he had in his right hand seven stars: and out of his mouth went a sharp twoedged sword: and his countenance [was] as the sun shineth in his strength.

Rev 1:20 The mystery of the seven stars which thou sawest in my right hand, and the seven golden candlesticks. The seven stars are the angels of the seven churches: and the seven candlesticks which thou sawest are the seven churches.

Rev 2:1 Unto the angel of the church of Ephesus write; These things saith he that holdeth the seven stars in his right hand, who walketh in the midst of the seven golden candlesticks;

Rev 3:1 And unto the angel of the church in Sardis write; These things saith he that hath the seven Spirits of God, and the seven stars; I know thy works, that thou hast a name that thou livest, and art dead.

Rev 4:5 And out of the throne proceeded lightnings and thunderings and voices: and [there were] seven lamps of fire burning before the throne, which are the seven Spirits of God.

Rev 5:1 And I saw in the right hand of him that sat on the throne a book written within and on the backside, sealed with seven seals.

Rev 5:5 And one of the elders saith unto me, Weep not: behold, the Lion of the tribe of Juda, the Root of David, hath prevailed to open the book, and to loose the seven seals thereof.

Rev 5:6 And I beheld, and, lo, in the midst of the throne and of the four beasts, and in the midst of the elders, stood a Lamb as it had been slain, having seven horns and seven eyes, which are the seven Spirits of God sent forth into all the earth.

Biblical Seven

Can the human body be divided into seven life support systems, and could all of these metaphors refer to them? Absolutely

Isa 4:1 And in that day seven women shall take hold of one man, saying, We will eat our own bread, and wear our own apparel: only let us be called by thy name, to take away our reproach.

Zec 3:9 For behold the stone that I have laid before Joshua; upon one stone [shall be] seven eyes: behold, I will engrave the graving thereof, saith the LORD of hosts, and I will remove the iniquity of that land in one day.

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Zec 4:10 For who hath despised the day of small things? for they shall rejoice, and shall see the plummet in the hand of Zerubbabel [with] those seven; they [are] the eyes of the LORD, which run to and fro through the whole earth.

Mar 16:9 Now when [Jesus] was risen early the first [day] of the week, he appeared first to Mary Magdalene, out of whom he had cast seven devils.

Luk 8:2 And certain women, which had been healed of evil spirits and infirmities, Mary called Magdalene, out of whom went seven devils,

Rev 1:13 And in the midst of the seven candlesticks [one] like unto the Son of man, clothed with a garment down to the foot, and girt about the paps with a golden girdle.

Rev 1:16 And he had in his right hand seven stars: and out of his mouth went a sharp twoedged sword: and his countenance [was] as the sun shineth in his strength.

Rev 1:20 The mystery of the seven stars which thou sawest in my right hand, and the seven golden candlesticks. The seven stars are the angels of the seven churches: and the seven candlesticks which thou sawest are the seven churches.

Rev 2:1 Unto the angel of the church of Ephesus write; These things saith he that holdeth the seven stars in his right hand, who walketh in the midst of the seven golden candlesticks;

Rev 3:1 And unto the angel of the church in Sardis write; These things saith he that hath the seven Spirits of God, and the seven stars; I know thy works, that thou hast a name that thou livest, and art dead.

Rev 4:5 And out of the throne proceeded lightnings and thunderings and voices: and [there were] seven lamps of fire burning before the throne, which are the seven Spirits of God.

Rev 5:1 And I saw in the right hand of him that sat on the throne a book written within and on the backside, sealed with seven seals.

Rev 5:5 And one of the elders saith unto me, Weep not: behold, the Lion of the tribe of Juda, the Root of David, hath prevailed to open the book, and to loose the seven seals thereof.

Rev 5:6 And I beheld, and, lo, in the midst of the throne and of the four beasts, and in the midst of the elders, stood a Lamb as it had been slain, having seven horns and seven eyes, which are the seven Spirits of God sent forth into all the earth.

“The Nobel Prize in mathematics was awarded to a California professor who has discovered a new number! The number is bleen, which he claims belongs between 6 and 7.”—George Carlin

Why don't they talk like men?

"Looky here, Jim; does a cat talk like we do?"

"No, a cat don't."

"Well, does a cow?"

"No, a cow don't, nuther."

"Does a cat talk like a cow, or a cow talk like a cat?"

"No, dey don't."

"It's natural and right for 'em to talk different from each other, ain't it?"

"Course."

"And ain't it natural and right for a cat and a cow to talk different from US?"

"Why, mos' sholy it is."

"Well, then, why ain't it natural and right for a Frenchman to talk different from us? You answer me that."

"Is a cat a man, Huck?"

"No."

"Well, den, dey ain't no sense in a cat talkin' like a man. Is a cow a man?—er is a cow a cat?"

"No, she ain't either of them."

"Well, den, she ain't got no business to talk like either one er the yuther of 'em. Is a Frenchman a man?"

"Yes."

"WELL, den! Dad blame it, why doan' he TALK like a man? You answer me DAT!"

I see it warn't no use wasting words—you can't learn a nigger to argue. So I quit." The Adventures Of Huckleberry Finn, Samuel L. Clemens, 1884

The Superior Man

“Tsze-lu said, “The ruler of Wei has been waiting for you, in order with you to administer the government. What will you consider the first thing to be done?”

The Master replied, “What is necessary is to rectify names.”

“So! indeed!” said Tsze-lu. “You are wide of the mark! Why must there be such a rectification?”

The Master said, “How uncultivated you are, Yu! A superior man, in regard to what he does not know, shows a cautious reserve.

“If names be not correct, language is not in accordance with the truth of things. If language be not in accordance with the truth of things, affairs cannot be carried on to success.

“When affairs cannot be carried on to success, proprieties and music do not flourish. When proprieties and music do not flourish, punishments will not be properly awarded. When punishments are not properly awarded, the people do not know how to move hand or foot.

“*Therefore, a superior man considers it necessary that the names he uses may be spoken appropriately, and also that what he speaks may be carried out appropriately. What the superior man requires is just that, in his words there may be nothing incorrect.*” ***Analects*** by Confucius

Flying Monkeys

"Just because no one has documented flying monkeys or talking lions yet, hardly means they don't exist." Walter Bishop, Fringe.

Analogy

23. Quintilian, whose authority is appealed to above, belonged to that age in which the exegesis of histories, poems, and other writings, was considered an essential part of grammar. He therefore, as well as Diomedes, and other ancient writers, divided the grammarian's duties into two parts; the one including what is now called grammar, and the other the explanation of authors, and the stigmatizing of the unworthy. Of the opinion referred to by Sanctius, it seems proper to make here an ampler citation. It shall be attempted in English, though the paragraph is not an easy one to translate. I understand the author to say, "Speakers, too, have their rules to observe; and writers, theirs. Language is established by reason, antiquity, authority, and custom. Of reason the chief ground is analogy, but sometimes etymology. Ancient things have a certain majesty, and, as I might say, religion, to commend them. Authority is wont to be sought from orators and historians; the necessity of metre mostly excuses the poets. When the judgement of the chief masters of eloquence passes for reason, even error seems right to those who follow great leaders. But, of the art of speaking, custom is the surest mistress; for speech is evidently to be used as money, which has upon it a public stamp. Yet all these things require a penetrating judgement, especially analogy; the force of which is, that one may refer what is doubtful, to something similar that is clearly established, and thus prove uncertain things by those which are sure."—QUINT, *de Inst. Orat.*, Lib. i, Cap. 6, p. 48

The Grammar of English Grammars; G. Brown, 10th ed.

Authority for Grammar

“Grammar unsupported by authority, is indeed mere fiction.” Goold Brown, ***The Grammar of English Grammar***.

“A distinction is also to be made between use and abuse. In nonsense, absurdity, or falsehood, there can never be any grammatical authority; because, however language may be abused, the usage which gives law to speech, is still that usage which is founded upon the common sense of mankind.” Goold Brown, ***The Grammar of English Grammar***.

“3. True grammar is founded on the authority of reputable custom; and that custom, on the use which men make of their reason.” Goold Brown, ***The Grammar of English Grammar***.

“But who shall determine whether the doctrines contained in any given treatise are, or are not, based upon such authority? Who shall decide whether the contributions which any individual may make to our grammatical code, are, or are not, consonant with the best usage? For this, there is no tribunal but the mass of readers, of whom few perhaps are very competent judges. And here an author's reputation for erudition and judgment, may be available to him: it is the public voice in his favour. Yet every man is at liberty to form his own opinion, and to alter it whenever better knowledge leads him to think differently.” Goold Brown, ***The Grammar of English Grammar***.

“22. It is obvious enough, that no writer on grammar has any right to propose himself as authority for what he teaches; for every language, being the common property of all who use it, ought to be carefully guarded against the caprices of individuals; and especially against that presumption which might attempt to impose erroneous or arbitrary definitions and rules.” Goold Brown, ***The Grammar of English Grammar***.

““Since the matter of which we are treating,” says the philologist of Salamanca, “is to be verified, first by reason, and then by testimony and usage, none ought to wonder if we sometimes deviate from the track of great men; for, with whatever authority any grammarian may weigh with me, unless he shall have confirmed his assertions by reason, and also by examples, he shall win no confidence in respect to grammar. For, as Seneca says, Epistle 95, 'Grammarians are the guardians, not the authors, of language.'” Goold Brown, ***The Grammar of English Grammar***.

Genesis

"How do we account for contradictory myths (such as the two accounts of creation in the Bible's book of Genesis) in the same culture?" ***Cultural Anthropology*** by William A. Haviland

Isa 45:7 I form the light, and create darkness, I make peace, and create evil: I the Lord that do all these things.

No Parents

Although all languages have some common principles, there is no primitive form or forms of language known to us, or to be reasonably imagined, from which they are all descended. *Introduction to Cratylus*, Benjamin Jowett.

Lord's Prayer

Matthew: Our Father which art in heaven, Hallowed be thy name. Thy kingdom come. Thy will be done in earth, as [it is] in heaven. Give us this day our daily bread. And forgive us our debts, as we forgive our debtors. And lead us not into temptation, but deliver us from evil: For thine is the kingdom, and the power, and the glory, forever. Amen.

Luke: Our Father which art in heaven, Hallowed be thy name. Thy kingdom come. Thy will be done, as in heaven, so in earth. Give us day by day our daily bread. And forgive us our sins; for we also forgive every one that is indebted to us. And lead us not into temptation; but deliver us from evil.

METONYMY is a change of names: as when the cause is mentioned for the effect, or the effect for the cause; the container for the thing contained, or the sign for the thing signified. Kirkham's Grammar, p. 223

Action and Reaction.

Socrates:: In a word, then, see if you grant what I just now said respecting every thing, viz., that according as the agent does, so the patient suffers. *Gorgias*, by Plato, Cope

Well then in a word, see if you admit universally the rule I just stated: the effect in the patient is of exactly the same kind as the action in the agent. *Gorgias*, by Plato, Cary

Socrates:: Then you would agree generally to the universal proposition which I was just now asserting: that the affection of the patient answers to the act of the agent? *Gorgias*, by Plato, Cary

Socrates:: Then you would agree generally to the universal proposition which I was just now asserting: that the affection of the patient answers to the act of the agent? *Gorgias*, by Plato, Jowett 3rd ed

Socrates:: In short, see if you grant what I just now said respecting all things, viz. that such as the agent produces, such does the patient suffer. *Gorgias*, by Plato, Taylor

Socrates:: Then consider whether you agree to what I said just now as a general rule in every case, namely, that the quality of the patient's experience corresponds to that of the agent's action. *Gorgias*, by Plato, Woodhead

Socrates:: Summing it up, see if you agree with what I was saying just now, that in all cases, in whatever way the thing acting upon something acts upon it, the thing acted upon is acted upon in just that way. *Gorgias*, by Plato, Zeyl

"Grammar is a very old field of study. Did you know that the sentence was first divided into subject and verb by Plato, the famed philosopher from ancient Greece? That was about 2,400 years ago! Ever since then, students all over the world have found it worthwhile to study the structure of words and sentences. Why? Because skill in speaking and writing is the hallmark of all educated people. *Basic English for English Language* Learners by Anne Seaton and Y. H. Mew

Art of Language.

Socrates:: Before a man knows the truth of each subject on which he speaks or writes, and is able to define the whole of a thing, and when he has defined it again knows how to divide into species until he comes to the indivisible; and in like manner, having distinguished the nature of the soul, and having found out what kind of speech is adapted to the nature of each, he so disposes and adorns his speech, applying to a soul of varied powers speeches that are various and all-harmonious, and simple ones to a simple soul, before this is done, he will not be able to manage speech with art, as far as it might be done, either for the purpose of teaching or persuading, as the whole of our former argument has proved. *Phaedrus* by Plato, Henry Cary.

Socrates: A man must know the truth about all the particular things of which he speaks or writes, and must be able to *define everything separately*; then when he has denned them, he must know how to divide them by classes until further division is impossible; and in the same way he must understand the nature of the soul, must find out the class of speech adapted to each nature, and must arrange and adorn his discourse accordingly, offering to the complex soul elaborate and harmonious discourses, and simple talks to the simple soul. Until he has attained to all this, he will not be able to speak by the method of art, so far as speech can be controlled by method, either for purposes of instruction or of persuasion. This has been taught by our whole preceding discussion. *Phaedrus* by Plato, H. N. Fowler.

Socrates:: The conditions to be fulfilled are these. First, you must know the truth about the subject that you speak or write about; that is to say, you must be able to isolate it in definition, and having so defined it you must next understand how to divide it into kinds, until you reach the limit of division; secondly, you must have a corresponding discernment of the nature of the soul, discover the type of speech appropriate to each nature, and order and arrange your discourse accordingly, addressing a variegated soul in a variegated style that ranges over the whole gamut of tones, and a simple soul in a simple style. All this must be done if you are to become competent, within human limits, as a scientific practitioner of speech, whether you propose to expound or to persuade. Such is the clear purport of all our foregoing discussion. *Phaedrus* by Plato, R. Hackforth.

Socrates:: Until a man knows the truth of the several particulars of which he is writing or speaking, and is able to define them as they are, and having defined them again to divide them until they can be no longer divided, and until in like manner he is able to discern the nature of the soul, and discover the different modes of discourse which are adapted to different natures, and to arrange and

dispose them in such a way that the simple form of speech may be addressed to the simpler nature, and the complex and composite to the more complex nature—until he has accomplished all this, he will be unable to handle arguments according to rules of art, as far as their nature allows them to be subjected to art, either for the purpose of teaching or persuading;—such is the view which is implied in the whole preceding argument. *Phaedrus* by Plato, Jowett 3rd ed.

Socrates:: First, you must know the truth concerning everything you are speaking or writing about; you must learn how to define each thing in itself; and, having defined it, you must know how to divide it into kinds until you reach something indivisible. Second, you must understand the nature of the soul, along the same lines; you must determine which kind of speech is appropriate to each kind of soul, prepare and arrange your speech accordingly, and offer a complex and elaborate speech to a complex soul and a simple speech to a simple one. Then, and only then, will you be able to use speech artfully, to the extent that its nature allows it to be used that way, either in order to teach or in order to persuade. This is the whole point of the argument we have been making. *Phaedrus* by Plato, Alexander Nehamas and Paul Woodruff.

Socrates:: But again we ought to remember that no one can acquire perfection in the art of speaking, either with respect to teaching or persuading, till he is well acquainted with the truth of the particulars about which he either speaks or writes: till he is able to define the whole of a thing; and when defined, again knows how to divide it according to species, as far as to an indivisible: and, according to this method, contemplating the soul, and discovering a species adapted to the nature of each, he thus disposes and adorns his discourse; accommodating various and all-harmonious discourses to a soul characterized by variety; but such as are simple, to one of a simple disposition. *Phaedrus* by Plato, Thomas Taylor.

Socrates:: Before a speaker is acquainted with the true nature of each subject on which he speaks or writes, and is become able to give it a general definition, and then again knows how to divide it into kinds till he reaches the indivisible; before he has investigated in like manner the nature of the soul, and finding the kind of discourse suitable for each kind of soul, orders and embellishes his discourse accordingly; offering to complex souls discourses of complex structure and rich in every harmony; but simple discourses to simple souls; before, I say, he is able to understand and do all this, he cannot possibly handle discourse with the art of which it admits, whether his object be to instruct or persuade, as the whole of our previous argument has tended to prove. *Phaedrus* by Plato, J. Wright.

The Art of Measurement

"Socrates: Well then, I shall say, if you agree so far, be so good as to answer me a question; Do not the same magnitudes appear larger to your sight when near, and smaller when at a distance?

Protagoras: They will acknowledge that.

Socrates: And the same holds of thickness and number; also sounds, which are in themselves equal, are greater when near, and lesser when at a distance.

Protagoras: They will grant that also.

Socrates: Now suppose happiness to consist in doing or choosing the greater, and in not doing or in avoiding the less, what would be the saving principle of human life? Would not the art of measuring be the saving principle; or would the power of appearance? Is not the latter that deceiving art which makes us wander up and down and take the things at one time of which we repent at another, both in our actions and in our choice of things great and small? But the art of measurement would do away with the effect of appearances, and, showing the truth, would fain teach the soul at last to find rest in the truth, and would thus save our life. Would not mankind generally acknowledge that the art which accomplishes this result is the art of measurement?" *Protagoras* by Plato, Jowett

"Seeing, then, that this is the case, answer me the following question. Do the same objects appear to your sight to be greater in size when near, and smaller in size when remote? or do they not?

Protagoras: They do, would be their answer.

Socrates: And is it not the same with the thickness and number of objects? And do not equal sounds appear louder when near, fainter at a distance?

Protagoras: Yes, they would say.

Socrates: If then our well-being had depended upon this, upon our making and choosing great lengths, and our avoiding and not making small ones, what would, to all appearance, have been the safeguard of our life? Would it be the art of mensuration, or the force of appearances? Or would this latter have led us astray, and caused us to be ever choosing and ever rejecting the same things; and ever repenting, in our practice and choice of lengths, both great and small? while the art of mensuration would bring to naught this phantom show, and, pointing out to us the truth, would anchor our soul thereon, and bid it rest, and assure us our life's safety. Would they allow, think you, that, in this case, the art of mensuration would save us, or some other art?" *Protgoras* by Plato, Wright, Josiah, 1824-1894

"Socrates: Since then, this is the case, I shall say 'Answer me this, do the same magnitudes appear to your sight greater when near, and less when at a distance, or not?' They will say they do. 'And things bulky, and things numerous, in like manner? and are not equal sounds greater when near, but less when at a distance?' They would say they are. If then, our wellbeing consisted in this, in making and choosing great masses, but in avoiding and not making little ones, what means of safety should we seem to have in life? Would it be the art of mensuration, or the faculty of judging by appearances? or would the latter lead us into error, and often cause us to vary in our choice of the same thing, now choosing one and now another, and to repent both in our actions and our selections of things great and little, but would the art of mensuration do away with this outward show, and making manifest the

truth, cause the soul to be at ease, abiding in the truth, and preserve our life? Would the men upon this admit that the art of mensuration preserves us, or some other art?

Protagoras: The art of mensuration." *Protgoras* by Plato, Bohn

Body, Mind and Soul

Socrates: His approving answers reassured me, and I began by degrees to regain confidence, and the vital heat returned. Such, Charmides, I said, is the nature of the charm, which I learned when serving with the army from one of the physicians of the Thracian king Zamolxis, who are said to be so skilful that they can even give immortality. This Thracian told me that in these notions of theirs, which I was just now mentioning, the Greek physicians are quite right as far as they go; but Zamolxis, he added, our king, who is also a god, says further, that as you ought not to attempt to cure the eyes without the head, or the head without the body, so neither ought you to nor the attempt to cure the body without the soul; and this, he said, is the reason why the cure of many diseases is unknown to the physicians of Hellas, because they are ignorant of the whole, which ought to be studied also; for the part can never be well unless the whole is well. For all good and evil, whether in the body or in human nature, originates, as he declared, in the soul, and overflows from thence, as if from the head into the eyes. And therefore if the head and body are to be well, you must begin by curing the soul; that is the first thing. And the cure, my dear youth, has to be effected by the use of certain charms, and these charms are fair words; and by them temperance is implanted in the soul, and where temperance is, there health is speedily imparted, not only to the head, but to the whole body. And he who taught me the cure and the charm at the same time added a special direction; Let no one, he said, persuade you to cure the head, until he has first given you his soul to be cured by the charm. For this, he said, is the great error of our day in the treatment of the human body, that physicians separate the soul from the body. And he added with emphasis, at the same time making me swear to his words, Let no one, however rich, or noble, or fair, persuade you to give him the cure, without the charm. Now I have sworn, and I must keep my oath, and therefore if you will allow me to apply the Thracian charm first to your soul, as the stranger directed, I will afterwards proceed to apply the cure to your head. But if not, I do not know what I am to do with you, my dear Charmides. Charmides, by Plato, Jowett.

Coordinate System of Reference

Socrates: Quite so; for I think, that without meaning it, we have fallen into a contradiction.

Glaucon: How?

Socrates: Because we have very boldly and disputatiously asserted, that unless persons natures are the same, they ought not to have the same employments; though we have not at all inquired the sort of difference and identity of the nature and with reference to which we defined them, when we ascribed different pursuits to different natures, and to the same natures the same pursuits. ***The Republic***, by Plato, Bohn

Curing the Soul.

Socrates: His approving answers reassured me, and I began by degrees to regain confidence, and the vital heat returned. Such, Charmides, I said, is the nature of the charm, which I learned when serving with the army from one of the physicians of the Thracian king Zamolxis, who are said to be so skilful that they can even give immortality. This Thracian told me that in these notions of theirs, which I was just now mentioning, the Greek physicians are quite right as far as they go; but Zamolxis, he added, our king, who is also a god, says further, that as you ought not to attempt to cure the eyes without the head, or the head without the body, so neither ought you to attempt to cure the body without the soul; and this, he said, is the reason why the cure of many diseases is unknown to the physicians of Hellas, because they are ignorant of the whole, which ought to be studied also; for the part can never be well unless the whole is well. For all good and evil, whether in the body or in human nature, originates, as he declared, in the soul, and overflows from thence, as if from the head into the eyes. And therefore if the head and body are to be well, you must begin by curing the soul; that is the first thing. And the cure, my dear youth, has to be effected by the use of certain charms, and these charms are fair words; and by them temperance is implanted in the soul, and where temperance is, there health is speedily imparted, not only to the head, but to the whole body. And he who taught me the cure and the charm at the same time added a special direction; Let no one, he said, persuade you to cure the head, until he has first given you his soul to be cured by the charm. For this, he said, is the great error of our day in the treatment of the human body, that physicians separate the soul from the body. And he added with emphasis, at the same time making me swear to his words, Let no one, however rich, or noble, or fair, persuade you to give him the cure, without the charm. Now I have sworn, and I must keep my oath, and therefore if you will allow me to apply the Thracian charm first to your soul, as the stranger directed, I will afterwards proceed to apply the cure to your head. But if not, I do not know what I am to do with you, my dear Charmides. ***Charmides***, by Plato, Jowett

Socrates:: And I, on hearing him express his praise, took courage, and my confidence was again a little excited and I revived; and such then, Charmides, is the power of this incantation; and I learnt it there during the expedition, from one of the Thracian physicians of Zamolxis, who are said to render men even immortal. This Thracian said that “the Greek physicians beautifully assert the same things as I now assert. But our king Zamolxis,” said he, “being a god, says that, as it is not proper to attempt to cure the eyes without the head, nor the head without the body, so neither is it proper to cure the body without the soul; and that this was the reason why many diseases escape the Greek physicians, because they are ignorant of the whole, to which attention ought to be paid; for when this is not in a good state, it is impossible for a part to be well. For all things,” said he, “proceed from the soul, both the good and bad, to the body and to the whole man, and flow from thence, as from the head to the eyes; and that it is therefore requisite to attend to that point first, and especially if the parts of the head and the rest of the body are to be in a good state.” And he said, thou happy youth, “that the soul was cured by certain incantations; and that these incantations were beautiful reasons; and that such temperance was generated in the soul, which, when generated and present, can easily impart health both to the head and to the rest of the body.” Having then taught me the medicine and the incantations, “Let none,” said he, “persuade you to cure his head with this medicine, who shall not have first presented his soul to be cured by you with the incantation. For the fault, said he, of the present time respecting

men is this, that certain persons endeavor to become physicians without a knowledge of either temperance or health." And he very earnestly enjoined me that no person should be so rich, or noble, or beautiful as to persuade me to act otherwise. I therefore, for I swore to him that I would obey him, and hence I must, will obey him. And indeed if you are willing, according to the injunctions of the stranger, to present your soul first for me to enchant by the incantations of the Thracian, I will administer also the medicine to your head; but if not, I cannot do any thing whatever for you, friend Charmides. ***Charmides***, by Plato, Burges

Socrates:: Then I, on hearing his approval, regained my courage; and little by little I began to muster up my confidence again, and my spirit began to rekindle. So I said,—Such, then, Charmides, is the nature of this charm. I learnt it on campaign over there, from one of the Thracian physicians of Zalmoxis, who are said even to make one immortal. This Thracian said that the Greeks were right in advising as I told you just now: "but Zalmoxis," he said, "our king, who is a god, says that as you ought not to attempt to cure eyes without head, or head without body, so you should not treat body without soul"; and this was the reason why most maladies evaded the physicians of Greece—that they neglected the whole, on which they ought to spend their pains, for if this were out of order it was impossible for the part to be in order. For all that was good and evil, he said, in the body and in man altogether was sprung from the soul, and flowed along from thence as it did from the head into the eyes. Wherefore that part was to be treated first and foremost, if all was to be well with the head and the rest of the body. And the treatment of the soul, so he said, my wonderful friend, is by means of certain charms, and these charms are words of the right sort: by the use of such words is temperance engendered in our souls, and as soon as it is engendered and present we may easily secure health to the head, and to the rest of the body also. Now in teaching me the remedy and the charms he remarked,—"Let nobody persuade you to treat his head with this remedy, unless he has first submitted his soul for you to treat with the charm. For at present," he said, "the cure of mankind is beset with the error of certain doctors who attempt to practice the one method without the other." And he most particularly enjoined on me not to let anyone, however wealthy or noble or handsome, induce me to disobey him. So I, since I have given him my oath, and must obey him, will do as he bids; and if you agree to submit your soul first to the effect of the Thracian charms, according to the stranger's injunctions, I will apply the remedy to your head: otherwise we shall be at a loss what to do with you, my dear Charmides. ***Charmides***, by Plato, Lamb

Socrates:: And when I heard his approval, I took heart and, little by little, my former confidence revived, and I began to wake up. So I said, "Well Charmides, it is just the same with this charm. I learned it while I was with the army, from one of the Thracian doctors of Zalmoxis, who are also said to make men immortal. And this Thracian said that the Greek doctors were right to say what I told you just now. 'But our king Zalmoxis,' he said, 'who is a god, says that just as one should not attempt to cure the eyes apart from the head, nor the head apart from the body, so one should not attempt to cure the body apart from the soul. And this, he says, is the very reason why most diseases are beyond the Greek doctors, that they do not pay attention to the whole as they ought to do, since if the whole is not in good condition, it is impossible that the part should be. Because,' he said, 'the soul is the source both of bodily health and bodily disease for the whole man, and these flow from the soul in the same way that the eyes are affected by the head. So it is necessary first and foremost to cure the soul if the parts of the head and of the rest of the

body are to be healthy. And the soul,' he said, 'my dear friend, is cured by means of certain charms, and these charms consist of beautiful words. It is a result of such words that temperance arises in the soul, and when the soul acquires and possesses temperance, it is easy to provide health both for the head and for the rest of the body.' So when he taught me the remedy and the charms, he also said, 'Don't let anyone persuade you to treat his head with this remedy who does not first submit his soul to you for treatment with the charm. Because nowadays,' he said, 'this is the mistake some doctors make with their patients. They try to produce health of body apart from health of soul.' And he gave me very strict instructions that I should be deaf to the entreaties of wealth, position, and personal beauty. So I (for I have given him my promise and must keep it) shall be obedient, and if you are willing, in accordance with the stranger's instructions, to submit your soul to be charmed with the Thracian's charms first, then I shall apply the remedy to your head. But if not, there is nothing we can do for you, my dear Charmides." ***Charmides***, by Plato, Sprague

Socrates:: And I, on hearing him praise this method of cure, took courage, and my confidence again was a little excited and revived: and I said, Such, therefore, O Charmides, is the power of this incantation. But I learnt it there, in the army, from one of the Thracian physicians of Zamolxis, who are said to render men immortal. This Thracian too said, "The Grecian physicians beautifully assert the same things as I now assert. But Zamolxis, said he, our king, being a god, says, that as it is not proper to attempt to cure the eyes without the head, nor the head without the body, so neither is it proper to cure the body without the soul: and that the reason why many diseases are unknown to the Grecian physicians is, because they are ignorant of the whole, to which attention ought to be paid. For when this is not well disposed, it is impossible that a part should be well affected. For all things, said he, originate from the soul, both such as are good and such as are evil, and emanate from thence into the body, and the whole man, just as things flow from the head to the eyes. It is requisite therefore that the maladies of this should in the first place and especially be healed, in order that the head and the whole body my be well affected." But he said, O blessed youth, "that the soul was cured of its maladies by certain incantations; and that these incantations were beautiful reasons, from which temperance was generated in souls." He further added, "that when this was inserted and present, it was easy to impart health, both to the head and the rest of the body." Having therefore taught me the medicine, and the incantations, "Let none, said he, persuade you to cure the head of any one with this medicine, who has not first presented his soul to be cured by you with the incantation. For the fault, said he, of the present time, respecting men, is this, that certain persons endeavor to become physicians without a knowledge of temperance and health." And he very earnestly ordered me to take care, that neither any rich, or noble, or beautiful person, ever persuaded me to do otherwise. I therefore declared to him, with an oath, that I would not; and hence it is necessary I should obey him, which I am determined to do. And indeed, if you are willing, according to the mandate of the stranger, to present your soul first of all to be enchanted by the incantations of the Thracian, I will administer the medicine to your head; but if not, I cannot in any respect benefit you, O friend Charmides. ***Charmides***, by Plato, Taylor

Definition and Description

11. To the aids which have been mentioned let this one still be added:—Make for yourself a definition or description of the thing which is presented to you, so as to see distinctly what kind of a thing it is in its substance, in its nudity, in its complete entirety, and tell yourself its proper name, and the names of the things of which it has been compounded, and into which it will be resolved.—THE MEDITATIONS OF MARCUS AURELIUS.

Therefore one kind of substance can be defined and formulated, i.e. the composite kind, whether it be perceptible or intelligible; but the primary parts of which this consists cannot be defined, since a definitory formula predicates something of something, and one part of the definition must play the part of matter and the other that of form. Metaphysics by Aristotle

But, leaving these arguments, let us insist on this, that it is not the same thing to change in quantity and in quality. Grant that in quantity a thing is not constant; still it is in respect of its form that we know each thing. Metaphysics by Aristotle.

See Dream for a Dream.

Thus the elements themselves cannot be defined or known, but only perceived, but things compounded of them can be both known and defined, and apprehended by true judgment. *Theaetetus*, by Plato, Henry Cary, Bohn. (1861)

My boy, if anyone means to deliberate successfully about anything, there is one thing he must do at the outset. He must know what it is he is deliberating about; otherwise he is bound to go utterly astray. Now most people fail to realize that they don't know what this or that really is; consequently when they start discussing something, they dispense with any agreed definition, assuming that they know the thing; then later on they naturally find, to their cost, that they agree neither with each other nor with themselves. That being so, you and I would do well to avoid what we charge against other people, and as the question before us is whether one should preferably consort with a lover or a nonlover, we ought to agree upon a definition of love which shows its nature and its effects. so that we may have it before our minds as something to refer to while we discuss whether love is beneficial or injurious. *Phaedrus* by Plato, Hackforth.

Definition and Elements

Definition as Standard

On every subject, my boy, there is one method of beginning, for those who mean to deliberate well; they must know what the thing is about which the deliberation is to be, or else of necessity go altogether astray. But it has escaped the notice of most men that they do not know the essence of each several thing. As if they did know, then, they do not agree with each other at the outset of the enquiry, and as they proceed they pay the probable penalty, for they agree neither with themselves nor with each other. Let not you and I, then, fall into the error which we condemn in others, but since the question proposed to us is, whether we ought rather to enter into a friendship with one who is in love or not, having by mutual agreement settled on a definition of love, what it is, and what power it has, and looking back and referring to this, let us prosecute our enquiry whether it occasions advantage or detriment. *Phaedrus* by Plato, Cary

There is only one way, dear boy, for those to begin who are to take counsel wisely about anything. One must know what the counsel is about, or it is sure to be utterly futile, but most people are ignorant of the fact that they do not know the nature of things. So, supposing that they do know it, they come to no agreement in the beginning of their enquiry, and as they go on they reach the natural result, they agree neither with themselves nor with each other. Now you and I must not fall into the error which we condemn in others, but, since we are to discuss the question, whether the lover or the non-lover is to be preferred let us first agree on a definition of love, its nature and its power, and then, keeping this definition in view and making constant reference to it, let us enquire whether love brings advantage or harm. *Phaedrus* by Plato, Fowler

My boy, if anyone means to deliberate successfully about anything, there is one thing he must do at the outset. He must know what it is he is deliberating about; otherwise he is bound to go utterly astray. Now most people fail to realize that they don't know what this or that really is; consequently when they start discussing something, they dispense with any agreed definition, assuming that they know the thing; then later on they naturally find, to their cost, that they agree neither with each other nor with themselves. That being so, you and I would do well to avoid what we charge against other people, and as the question before us is whether one should preferably consort with a lover or a nonlover, we ought to agree upon a definition of love which shows its nature and its effects. so that we may have it before our minds as something to refer to while we discuss whether love is beneficial or injurious. *Phaedrus* by Plato, Hackforth

‘All good counsel begins in the same way; a man should know what he is advising about, or his counsel will all come to naught. But people imagine that they know about the nature of things, when they don’t know about them, and, not having come to an understanding at first because they think that they know, they end, as might be expected, in contradicting one another and themselves. Now you and I must not be guilty of this fundamental error which we condemn in others; but as our question is whether the lover or non-lover is to be preferred, let us first of all agree in defining the nature and power of love, and then, keeping our eyes upon the definition and to this appealing, let us further enquire whether love brings advantage or disadvantage. *Phaedrus* by Plato, Jowett 3rd ed

“If you wish to reach a good decision on any topic, my boy, there is only one way to begin: You must know what the decision is about, or else you are bound to miss your target altogether. Ordinary people cannot see that they do not know the true nature of a particular subject, so they proceed as if they did; and because they do not work out an agreement at the start of the inquiry, they wind up as you would expect—in conflict with themselves and each other. Now you and I had better not let this happen to us, since we criticize it in others. Because you and I are about to discuss whether a boy should make friends with a man who loves him rather than with one who does not, we should agree on defining what love is and what effects it has. Then we can look back and refer to that as we try to find out whether to expect benefit or harm from love. *Phaedrus* by Plato, Nehamas and Woodruff

In every thing, young man, one principle, to those who are about to consult in a becoming manner, is, to know that about which they consult, or else it is necessary that they should perfectly wander from the truth. But the multitude are ignorant that they do not know the essence of every particular. Hence in the beginning of their disquisitions, they do not trouble themselves to declare what the essence of a thing is, as if they were very knowing in matters of this kind; but in the course of their inquiry they exhibit nothing more than probable reasons; and thus they are neither consistent with themselves, nor with others. With respect to you and me, therefore, lest we should suffer that which we condemn in others, in our inquiry, whether the engagement of friendship ought to be entered upon with one who does not love, rather than with one who does, we ought to know what love is, and what power it possesses, mutually agreeing in our definition respecting it; and looking towards, and referring our discourse to this, we should consider whether it is the cause of advantage or detriment. *Phaedrus* by Plato, Taylor

On every subject, my friend, there is but one mode of beginning for those who would deliberate well. They must know what the thing is on which they are deliberating, or else of necessity go altogether astray. Most men, however, are blind to the fact that they are ignorant of the essential character of each individual thing. Fancying therefore that they possess this knowledge, they come to no mutual understanding at the outset of their inquiry; and in the sequel they exhibit the natural consequence, an inconsistency with themselves and each other. Let not you and me then fall into the error which we condemn in others; but since the question before us is, whether love or the absence of love is desirable in friendship, let us first establish by mutual consent a definition of love that will explain its nature and its powers; and then, with this to look back upon and refer to, let us proceed to consider whether it is profitable or injurious in its results. *Phaedrus* by Plato, Wright

For sophistic and dialectic turn on the same class of things as philosophy, but this differs from dialectic in the nature of the faculty required and from sophistic in respect of the purpose of the philosophic life. Dialectic is merely critical where philosophy claims to know, and sophistic is what appears to be philosophy but is not. *Metaphysics* by Aristotle.

Socr. For my part, Phædrus, I am not only myself a lover of these divisions and generalisations, in order that I may be able both to speak and think; but if I perceive any one else able to comprehend the one and the many, as they are in nature, him "I follow behind as in the footsteps of a god." But whether I designate those who are able to do this, rightly or not, God knows, however I have hitherto called them dialecticians. *Phædrus*, by Plato, Bohn.

Guest. Since then we have acknowledged, that the genera (of things) have a mingling with each other, after the same manner, is it not necessary for him to proceed in his discourse with some science, who is about to show what kind of genera accord with what kind, and what do not receive each other? Likewise, whether these genera so hold together through all things as to be capable of being mutually mingled? And again in their divisions, whether there are other causes of division through wholes?

Theæ. How is there not a need of science, and, perhaps, of nearly the greatest?

Guest. What then, Theætetus, shall we call this science? Or, by Jupiter, have we ignorantly fallen upon the science of freemen? And do we nearly appear, while searching after a sophist, to have found previously a philosopher?

[83.] *Theæ*. How say you?

Guest. Shall we not say, that to divide according to genera, and neither to think the same species different, nor a different species the same, is the business of the dialectic science?" The Sophist by Plato, Bohn.

Socrates:: Dialectic, then, as you will agree, is the coping-stone of the sciences, and is set over them; no other science can be placed higher—the nature of knowledge can no further go? Republic, Book 7 by Plato, Jowett

Dialectician

Socrates: : Now, not only do I pursue myself, with all a lovers assiduity, these methods of decomposing and combining, but if ever I find any one else whom I judge capable of apprehending the one and the many as they are in nature, that man I follow behind, as though in the track of a god. And to all who are possessed of this power I have been in the habit of giving, whether rightly or wrongly, heaven knows, the name of dialecticians. *Phaedrus* by Plato, J. Wright.

Socrates: : But I, O Phædrus, am a lover of such divisions and compositions as may enable me both to speak and understand. And if I think that any other is able to behold the one and the many, according to the nature of things, this man I follow, pursuing his footsteps as if he were a God. But whether or not I properly denominate those who are able to accomplish this, Divinity knows. But I have hitherto called them men conversant with dialectic. *Phaedrus* by Plato, Thomas Taylort.

Socrates: : Well, Phaedrus, I am myself a lover of these divisions and collections, so that I may be able to think and to speak; and if I believe that someone else is capable of discerning a single thing that is also by nature capable of encompassing many, I follow "straight behind, in his tracks, as if he were a god." God knows whether this is the right name for those who can do this correctly or not, but so far I have always called them "dialecticians." *Phaedrus* by Plato, Alexander Nehamas and Paul Woodruff.

Socrates: : I am myself a great lover of these processes of division and generalization; they help me to speak and to think. And if I find any man who is able to see 'a One and Many' in nature, him I follow, and 'walk in his footsteps as if he were a god.' And those who have this art, I have hitherto been in the habit of calling dialecticians; but God knows whether the name is right or not. *Phaedrus* by Plato, Jowett 3rd ed

Socrates: : Believe me, Phaedrus, I am myself a lover of these divisions and collections, that I may gain the power to speak and to think, and whenever I deem another man able to discern an objective unity and plurality, I follow 'in his footsteps where he leadeth as a god.' Furthermore—whether I am right or wrong in doing so, God alone knows—it is those that have this ability whom for the present I call dialecticians. *Phaedrus* by Plato, R. Hackforth

Socrates: : Now I myself, Phaedrus, am a lover of these processes of division and bringing together, as aids to speech and thought; and if I think any other man is able to see things that can naturally be collected into one and divided into many, him I follow after and walk in his footsteps as if he were a god. And whether the name I give to those who can do this is right or wrong, God knows, but I have called them hitherto dialecticians. *Phaedrus* by Plato, H. N. Fowler.

Socrates: : For my part, Phædrus, I am not only myself a lover of these divisions and generalisations, in order that I may be able both to speak and think; but if I perceive any one else able to comprehend the one and the many,

as they are in nature, him “I follow behind as in the footsteps of a god.” But whether I designate those who are able to do this, rightly or not, God knows, however I have hitherto called them dialecticians. *Phaedrus* by Plato, Henry Cary.

Dream for a Dream

Within the following quote is the foundation of the Two-Element Metaphysics which lay at the foundation of all reasoning, both Logic an Analogic. In a metaphor, this Two-Element Metaphysics was given as the Two-Stone Tablets of Moses, and the Two-Witnesses of God.

"SOCRATES: Let me give you, then, a dream in return for a dream:—Methought that I too had a dream, and I heard in my dream that the primeval letters or elements out of which you and I and all other things are compounded, have no reason or explanation; you can only name them, but no predicate can be either affirmed or denied of them, for in the one case existence, in the other non-existence is already implied, neither of which must be added, if you mean to speak of this or that thing by itself alone. It should not be called itself, or that, or each, or alone, or this, or the like; for these go about everywhere and are applied to all things, but are distinct from them; whereas, if the first elements could be described, and had a definition of their own, they would be spoken of apart from all else. But none of these primeval elements can be defined; they can only be named, for they have nothing but a name, and the things which are compounded of them, as they are complex, are expressed by a combination of names, for the combination of names is the essence of a definition. Thus, then, the elements or letters are only objects of perception, and cannot be defined or known; but the syllables or combinations of them are known and expressed, and are apprehended by true opinion. When, therefore, any one forms the true opinion of anything without rational explanation, you may say that his mind is truly exercised, but has no knowledge; for he who cannot give and receive a reason for a thing, has no knowledge of that thing; but when he adds rational explanation, then, he is perfected in knowledge and may be all that I have been denying of him. Was that the form in which the dream appeared to you?" *Theaetetus*, by Plato, Jowett

"SOCRATES: Hear, then, a dream for a dream. For I too seem to myself to have heard some people say, that the first elements, as it were, from which we and all other things are composed, cannot be explained by reason; for that each several element by itself can only be named, but that nothing else can be predicated of it, neither that it exists nor does not exist; for that this would be to attribute to it existence or non-existence, whereas nothing ought to be added to it, if one means to speak of the thing itself only; neither must we add to it the term the, or that, or each, or only, or this, or many others of the same kind; for these are constantly varying and are applied to all things, and are different from the things to which they are added. But we ought, if it were possible, to speak of the thing itself, and, if it has a definition peculiar to itself, to speak of it without the addition of any thing else. Now, however, it is impossible for any of the first elements to be explained by a definition, for it does not admit of any thing else than being named, for it has only a name; but the things that have been composed from these, as they are complex, so their names, when connected together, constitute a definition for a connection of names is the essence of definition. Thus the elements themselves cannot be defined or known, but only perceived, but things compounded of them can be both known and defined, and apprehended by true judgment. When, therefore, any one forms a true judgment of any thing, without explanation, his soul indeed perceives the truth respecting it, but does not know it, for he who is not able to give and receive an explanation of a thing must be ignorant of that thing, but when he adds an explanation to it then he is capable of knowing all these things, and may be perfect in science.

Is it thus that you have heard the dream, or in some other way?" THEAETETUS, by Plato, Henry Cary, Bohn. (1861)

"SOCRATES: Take a dream in exchange for a dream. I seem to have heard that the primal elements, out of which all persons and things are composed, have no definition. Each element by itself is only a name, and cannot be said either to exist or not to exist. To affirm existence of it or nonexistence would by adding something to it destroy its singleness. Neither it nor that nor each nor only nor this nor any such term must be asserted of it; these terms are moveable and applicable everywhere, and are quite different from the things, to which they are joined, while, on the contrary, no statement about the elements or suitable definition of them, even if such a thing were possible, could be applied to any other thing. Thus these elements cannot be defined; named they can be but that is all. On the other hand that which is compounded from them, and the resulting combination of names, are defined, since the combination of two names is the essence of definition. Thus we have the undefinable and unknown letters or rudiments, which are objects of perception, and the compounds or syllables, which are known and expressed, and are conceived by true opinion. Whenever anyone has a true opinion without definition, his mind may be said to be concerned with it truly, but not to have knowledge. He who cannot give and take the definition of a thing, is in ignorance of it; but, if he can add the definition, he is in the opposite state of mind, having perfect knowledge. Such was the substance of my vision. Was yours the same?" THEAETETUS, by Plato, S. W. Dyde. (1899)

"SOCRATES: Listen then, while I relate it to you a dream for a dream. I in turn used to imagine that I heard certain persons say that the primary elements of which we and all else are composed admit of no rational explanation; for each alone by itself can only be named, and no qualification can be added, neither that it is nor that it is not, for that would at once be adding to it existence or non-existence, whereas we must add nothing to it, if we are to speak of that itself alone. Indeed, not even itself or that or each or alone or this or anything else of the sort, of which there are many, must be added; for these are prevalent terms which are added to all things indiscriminately and are different from the things to which they are added; but if it were possible to explain an element, and it admitted of a rational explanation of its own, it would have to be explained apart from everything else. But in fact none of the primal elements can be expressed by reason; they can only be named, for they have only a name; but the things composed of these are themselves complex, and so their names are complex and form a rational explanation; for the combination of names is the essence of reasoning. Thus the elements are not objects of reason or of knowledge, but only of perception, whereas the combinations of them are objects of knowledge and expression and true opinion. When therefore a man acquires without reasoning the true opinion about anything, his mind has the truth about it, but has no knowledge; for he who cannot give and receive a rational explanation of a thing is without knowledge of it; but when he has acquired also a rational explanation he may possibly have become all that I have said and may now be perfect in knowledge. Is that the version of the dream you have heard, or is it different?" THEAETETUS, by Plato, Harold North Fowler. (1921)

"SOCRATES: Listen then to a dream in return for a dream. In my dream, too, I thought I was listening to people saying that the primary elements, as it were, of which we and everything else are composed, have no account. Each of them, in itself, can only be named; it is not possible to say anything else of it, either that it is or that it is not. That would mean that

we were adding being or not-being to it; whereas we must not attach anything, if we are to speak of that thing itself alone. Indeed we ought not to apply to it even such words as 'itself or 'that', 'each', 'alone', or 'this', or any other of the many words of this kind; for these go the round and are applied to all things alike, being other than the things to which they are added, whereas if it were possible to express the element itself and it had its own proprietary account, it would have to be expressed without any other thing. As it is, however, it is impossible that any of the primaries should be expressed in an account; it can only be named, for a name is all that it has. But with the things composed of these, it is another matter. Here, just in the same way as the elements themselves are woven together, so their names may be woven together and become an account of something—an account being essentially a complex" of names. Thus the elements are unaccountable and unknowable, but they are perceivable, whereas the complexes are both knowable and expressible and can be the objects of true judgement.

Now when a man gets a true judgement about something without an account, his soul is in a state of truth as regards that thing, but he does not know it; for someone who cannot give and take an account of a thing is ignorant about it. But when he has also got an account of it, he is capable of all this and is made perfect in knowledge. Was the dream you heard the same as this or a different one?" THEAETETUS, by Plato, Levett. (1992)

"SOCRATES: Then hear a dream of mine as a set-off to yours. For I, on the other hand, fancy I heard some persons say, that the first principles, or elements as we may call them, from which we and all visible, things are composed, have no account that can be given of them; we can only give each of them a name as an abstraction, but we can predicate nothing else about them, not even Being or non-Being. For if so, there is added to it existence or non-existence; whereas we ought to apply no qualities, if one is to speak of a simple element. Nay, we must not add even 'itself,' or 'that', nor 'each,' nor 'only,' nor 'this,' nor many other attributes of the like kind. For these terms are applied to all things in a perpetual round, and are in themselves different from the things to which they are applied; but, if a thing can be spoken of *per se*, and a proper account can be given of it, it ought to be described without any of these accessories. But, as the case really stands, it is impossible that any of the first principles should be described in terms, since it can only be named at the most. But when we come to consider compounds of them, then as they are themselves combined, so the terms used to describe them are combined so as to become an account or definition of them. For the combination of terms is the very essence of a definition. Thus then the primary elements are undefinable and unknowable, and are merely objects of sensation ; but the combinations are knowable and definable and comprehensible by a true and correct view. When then a person has got the true conception of anything without being able to give an account of it, we say that his soul holds the truth about it, though he cannot be said to know it. For one who can neither give nor get an account of a thing, is without any scientific knowledge about that particular thing. But when he has got the further power of defining it, he has become able in all these respects, and is perfect in wisdom. Was this the purport of the dream you heard, or was it different?" THEAETETUS, by Plato, Paley. (1875)

"SOCRATES: Hear, then, a dream for a dream. For I also appear to have heard from certain persons that the first elements, as it were, from which we and other things are composed cannot be rationally described. For they say that each of these can alone be denominated by itself, but cannot be

called any thing else, neither as that which is nor as that which is not; because essence, or non-essence, would thus be assigned to it. But it is requisite to add nothing, if any one speaks of a thing itself alone. For neither the term this, nor that, nor each, nor alone, nor any other such appellations, should be employed, because these are applied to things in a circular progression, and are different from the things to which they are added. But it is necessary, if possible, to speak of the thing itself, and, if it has a proper definition, to assert something respecting it, without the addition of any thing else. Now, however, no one of things first can be made the subject of discourse; for it does not admit of any thing else than a denomination. But the things composed from these, as they are themselves woven together, so from the weaving together of their names discourse is produced. For the connection of names is the essence of discourse. Hence, the elements themselves are ineffable and unknown, but at the same time are objects of sense: but syllables are known and effable, and may be apprehended by true opinion. When, therefore, any one receives a true opinion of any thing, without reason, then his soul perceives the truth respecting it, but he does not know the thing; because he who is incapable of giving and receiving a reason concerning a thing must be destitute of science respecting it. But when he receives a reason, then he may be able to know all these, and acquire science in perfection. Have you not, therefore, heard a dream, or is it any thing else?" THEAETETUS, by Plato, Thomas Taylor. (1804)

Education

Socrates:: 'Then, if these things be true, we must think thus on the subject before us—that education is not what certain of its professors declare it to be. They say, if you remember, that they put knowledge in the soul where no knowledge has been, if men put sight into blind eyes.'

Glaucon:: 'Yes, they do.'

Socrates:: 'But our present argument, shows that there resides in each man's soul this faculty and the instrument wherewith he learns, and that it is just as if the eye could not turn from darkness to light unless the whole body turned with it; so this faculty and instrument must be wheeled round together with the whole soul away from that which is becoming, until it is able to look upon and to endure being and the brightest blaze of being; and that we declare to be the good. Do we not?'

Glaucon:: 'Yes.'

Socrates:: 'Education, then, will be an art of doing this, an art of conversion, and will consider in what manner the soul will be turned round most easily and effectively. Its aim will not be to implant vision in the instrument of sight. It will regard it as already possessing that, but as being turned in a wrong direction, and not looking where it ought, and it will try to set this right.' The Republic by Plato, A. D. Lindsay.

False Words, or Illiteracy

"false words are not only evil in themselves, but they infect the mind with evil." *Phaedo* by Plato, Jowett trans.

"Crito, that to speak improperly is not only culpable as to the thing itself, but likewise occasions some injury to our souls." *Phaedo* by Plato, Bohn

"For you must know, my dear Crito, says he, turning to him, that speaking amiss of death is not only a fault in the way of speaking, but likewise wounds the soul" *Phaedo* by Plato, Morley, Henry, 1822-1894

"For, dear Crito, you may be sure that such wrong words are not only undesirable in themselves, but they infect the soul with evil." *Phaedo* by Plato, Fowler, Harold North, 1859-1955

"Crito, that to use improper expressions not merely is an offence in respect of the thing itself, but also engenders some mischief in our souls." *Phaedo* by Plato, Cope, Edward Meredith, 1818-1873

The Foundation of Grammar

And so, too, we shall apply letters to the expression of objects, either single letters when required, or several letters, and so we shall form syllables, as they are called, and from syllables make nouns and verbs, and thus, at last, from the combinations of nouns and verbs arrive at language, large and fair and whole. The Cratylus, Plato, Benjamin Jowett

In the same manner we will bring the elements of words to things, and one to one, wherever it seems to be necessary, and many together, making what persons call syllables; and again, combining those syllables together, from which nouns and verbs are composed; and again, from these nouns and verbs we will compose something great and beautiful and entire, and like the animal there described by the painter's art, discourse by the name-giving, or rhetorical, or whatever art it may be. The Cratylus, Plato, George Burges

Similarly, we'll apply letters to things, using one letter for one thing, when that's what seems to be required, or many letters together, to form what's called a syllable, or many syllables combined to form names and verbs. From names and verbs, in turn, we shall finally construct something important, beautiful, and whole. And just as the painter painted an animal, so—by means of the craft of naming or rhetoric or whatever it is—we shall construct sentences. The Cratylus, Plato, C. D. C. Reeve

In the same manner we should accommodate the elements of words to things, and one to one, wherever it appears to be necessary, and should fabricate symbols, which they call syllables. And again, combining these syllables together, from which nouns and verbs are composed, we should again from these nouns and verbs compose something beautiful and entire; that what the animal described by the painter's art was in the above instance, discourse may be in this; whether constructed by the onomastic, or rhetorical, or any other art. The Cratylus, Plato, Thomas Taylor

Geometrical Equality

The sages too, say, Callicles, that heaven and earth, gods and men, are held together by communion, friendship, order, temperance, and justice, and for this reason, my friend, they call this universe, order, and not disorder or intemperance. You, however, appear to me not to attend to these things, and this though you are wise; but it has escaped your observation that geometrical equality has great power both among gods and among men; on the contrary you think that every one should strive to get more than others; for you neglect geometry. Gorgias, by Plato, Henry Cary.

And, Callicles, the heaven and the earth and gods and men, as the wise tell us, are kept l together by fellowship and friendship and orderliness and temperance and justice, and this is why, my friend, they give the name of 'order' to yonder universe and not of disorder or licence (unrestraint). But you it seems have not paid attention to this, clever as you are, but have overlooked the mighty power of geometrical equality in heaven as well as earth. You suppose that a spirit of inequality, the desire of obtaining more than one's fair share, is what ought to be cultivated; because you don't care for geometry. Gorgias, by Plato, E. M. Cope.

But although you are a philosopher you seem to me never to have observed that geometrical equality is mighty, both among gods and men; you think that you ought to cultivate inequality or excess, and do not care about geometry. Gorgias, by Plato, Jowett 3rd ed.

And on this account, my friend, they call this universe kosmos, or order, and not akosmia, or disorder, and akolasia, or intemperance. However, you appear to me not to attend to these things, and this though you are wise. But you are ignorant that geometric equality is able to accomplish great things, both among Gods and men. On the contrary, you think that every one should strive to possess more than others: for you neglect geometry. Gorgias, by Plato, Thomas Taylor.

Geometry

It is not a casual fact that the Dialog *Theaetetus* is in the arms of geometers, one of which is Euclid.

Gorgias

So this is how I set down the matter, and I say that this is true. And if it is true, then a person who wants to be happy must evidently pursue and practice self-control. Each of us must flee away from lack of discipline as quickly as his feet will carry him, and must above all make sure that he has no need of being disciplined, but if he does have that need, either he himself or anyone in his house, either a private citizen or a whole city, he must pay his due and must be disciplined, if he's to be happy. This is the target which I think one should look to in living, and in his actions he should direct all of his own affairs and those of his city to the end that justice and self-control will be present in one who is to be blessed. He should not allow his appetites to be undisciplined or undertake to fill them up—that's interminably bad—and live the life of a marauder. Such a man could not be dear to another man or to a god, for he cannot be a partner, and where there's no partnership there's no friendship. Yes, Callicles, wise men claim that partnership and friendship, orderliness, self-control, and justice hold together heaven and earth, and gods and men, and that is why they call this universe a *world order,* my friend, and not an undisciplined world-disorder. I believe that you don't pay attention to these facts, even though you're a wise man in these matters. You've failed to notice that proportionate equality has great power among both gods and men, and you suppose that you ought to practice getting the greater share.

That's because you neglect geometry. *Gorgias Or On Rhetoric*, Bohn, 1861

Republic

“Glaucon:: You mean geometry?

Socrates:: I do.

Glaucon:: Obviously, so much of it as bears on warlike operations will concern us. For pitching a camp, occupying a position, closing up or deploying troops, and for other formations in battle or on the march, a knowledge of geometry will be an advantage.

Socrates:: But still, for such purposes a small amount of geometry and arithmetic will be enough. We have to ask whether a much more advanced study will help towards a comprehension of the essential Form of Goodness. Any study, as we said, will have that tendency, if it forces the soul to turn towards the region of that beatific reality, which it must by all means behold. So geometry will be suitable or not, according as it makes us contemplate reality or the world of change.

Glaucon:: That is our view.

Socrates:: In this respect, then, no one who has even a slight acquaintance with geometry will deny that the nature of this science is in flat contradiction with the absurd language used by mathematicians, for want of better terms. They constantly talk of ‘operations’ like ‘squaring’, ‘applying’, ‘adding’, and so on, as if the object were to do something, whereas the true purpose of the whole subject is knowledge—knowledge, moreover, of what eternally exists, not of anything that comes to be this or that at some time and ceases to be.

Glaucon:: Yes, that will be readily agreed: geometry is knowledge of the eternally existent.

Socrates:: If so, it will tend to draw the soul towards truth and to direct upwards the philosophic intelligence which is now wrongly turned earthwards.

Glaucon:: There is no doubt about that.

Socrates:: Then there can be no doubt that geometry must by no means be neglected by the citizens of your Callipolis. It has incidental advantages, too, which are not to be despised. There are its uses in war, which you mentioned; and also we know that a training in geometry makes all the difference in preparing the mind for any kind of study.

Glaucon:: It does indeed." *Republic*, Plato, Francis Macdonald Cornford

Glaucon:: What is that? Do you mean geometry?

Socrates:: Even so.

Glaucon:: It is obvious, that all that part of it which bears upon strategy does concern us. For in encamping, in occupying positions, in closing up and deploying troops, and in executing all the other manoeuvres of an army in the field of battle or on the march, it will make every difference to a military man, whether he is a good geometrician, or not.

Socrates:: Nevertheless, a trifling knowledge of geometry and calculation will suffice for these purposes. The question is, whether the larger and more advanced part of the study tends at all to facilitate our contemplation of the essential Form of Good. Now, according to us, this is the tendency of everything that compels the soul to transfer itself to that region in which is contained the most blissful part of that real existence, which it is of the highest importance for it to behold.

Glaucon:: You are right.

Socrates:: Consequently if geometry compels the soul to contemplate real existence, it does concern us; but if it only forces the changeful and perishing upon our notice, it does not concern us.

Glaucon:: Yes, so we affirm.

Socrates:: Well then, on one point at any rate we shall encounter no opposition from those who are even slightly acquainted with geometry, when we assert that this science holds a position which flatly contradicts the language employed by those who handle it.

Glaucon:: How so?

Socrates:: They talk, I believe, in a very ridiculous and poverty stricken style. For they speak invariably of squaring, and producing, and adding, and so on, as if they were engaged in some business, and as if all their propositions had a practical end in view; whereas in reality I conceive that the science is pursued wholly for the sake of knowledge.

Glaucon:: Assuredly it is.

Socrates:: There is still a point about which we must be agreed, is there not?

Glaucon:: What is it?

Socrates:: That the science is pursued for the sake of the knowledge of what eternally exists, and not of what comes for a moment into existence, and then perishes.

Glaucon:: We shall soon be agreed about that. Geometry, no doubt, is a knowledge of what eternally exists.

Socrates:: If that be so, my excellent friend, geometry must tend to draw the soul towards truth, and to give the finishing stroke to the philosophic spirit, thus contributing to raise up what, at present, we so wrongly keep down.

Glaucon:: Yes, it will do so most forcibly.

Socrates:: Then you must, in the most forcible manner, direct the citizens of your beautiful city on no account to fail to apply themselves to geometry. For even its secondary advantages are not trifling.

Glaucon:: Pray what are they?

Socrates:: Not to mention those which you specified as bearing upon the conduct of war, I would insist particularly upon the fact, of which we are assured, that, where a ready reception of any kind of learning is an object, it will make all and every difference whether the pupil has applied himself to geometry or not.

Glaucon:: Yes, undoubtedly it will.

Socrates:: Shall we, then, impose this, as a secondary study, upon our young men?

Glaucon:: Yes, let us do so. *Republic*, Plato, John Llewelyn Davies, and David James Vaughan

Glaucon:: What is it;—is it geometry you mean?

Socrates:: That very thing.

Glaucon:: So far, as it bears a relation to the concerns of war, it evidently does concern us;—for in pitching encampments, occupying positions, contracting and extending a line of troops, and as respects all the varied forms in which they draw up armies, either in battle itself or during a march, it would make a vast difference, whether a general were a geometrician or not.

Socrates:: Of coarse, for such purposes as these a very slender knowledge of geometry, and a small portion of arithmetic would suffice;—but as for any considerable amount thereof, and great progress in it, we must inquire how far they tend to this,—namely, to make us apprehend more easily the idea of the good:—and we say that all things contribute thereto, which compel the soul to turn itself to that region in which is the happiest portion of true being, which it must by all means perceive.

Glaucon:: Your remark is correct.

Socrates:: If then it compels the soul to contemplate true being, it is suitable,—but if only what is sensible and evanescent, it is not suitable.

Glaucon:: Aye, truly, we say so.

Socrates:: This point then, at least, those who have but little acquaintance with geometry, will not argue with us,—that this science has an entirely opposite nature to the words employed in it by those who practise it.

Glaucon:: How?

Socrates:: They speak somehow most absurdly, and necessarily so, since all the terms they use seem to be with a view to operation and practice,—such as squaring, producing, adding, and such-like sounds; whereas on the other hand, the whole science should be studied for the sake of real knowledge.

Glaucon:: Assuredly.

Socrates:: Is this, then, further to be agreed on?

Glaucon:: What?

Socrates:: That it be studied with a view to the knowledge of eternal being, and not of that which is subject to generation and destruction?

Glaucon:: We may well grant that; for it is the business of geometry to concern itself with eternal being.

Socrates:: It would have a tendency, therefore, gentle sir, to draw the soul to truth, and to cause a philosophic intelligence to direct upwards the thoughts which we now improperly cast downwards.

Glaucon:: As much as possible.

Socrates:: As far as possible, then, we must give special orders, that the inhabitants of that fine state of yours should by no means omit the study of geometry, since even its by-works are not inconsiderable.

Glaucon:: What are they?

Socrates:: Those which you have just mentioned that concern war;—and indeed with reference to all branches of science, for the better understanding thereof, we are some how sure that it makes an entire difference every way, whether a man be acquainted with geometry or not.

Glaucon:: Every way, indeed, by Zeus.

Socrates:: Let us fix on this then, as the second branch of learning for youth.

Glaucon:: Let us so fix it. *Republic*, Plato, by Henry Davis

Glaucon:: What subject is that? Do you mean geometry?

Socrates:: That's the very one I had in mind.

Glaucon:: Insofar as it pertains to war, it's obviously appropriate, for when it comes to setting up camp, occupying a region, concentrating troops, deploying them, or with regard to any of the other formations an army adopts in battle or on the march, it makes all the difference whether someone is a geometer or not.

Socrates:: But, for things like that, even a little geometry—or calculation for that matter—would suffice. What we need to consider is whether the greater and more advanced part of it tends to make it easier to see the form of the good. And we say that anything has that tendency if it compels the soul to turn itself around towards the region in which lies the happiest of the things that are, the one the soul must see at any cost.

Glaucon:: You're right.

Socrates:: Therefore, if geometry compels the soul to study being, it's appropriate, but if it compels it to study becoming, it's inappropriate.

Glaucon:: So we've said, at any rate.

Socrates:: Now, no one with even a little experience of geometry will dispute that this science is entirely the opposite of what is said about it in the accounts of its practitioners.

Glaucon:: How do you mean?

Socrates:: They give ridiculous accounts of it, though they can't help it, for they speak like practical men, and all their accounts refer to doing things. They talk of "squaring," "applying," "adding," and the like, whereas the entire subject is pursued for the sake of knowledge.

Glaucon:: Absolutely.

Socrates:: And mustn't we also agree on a further point?

Glaucon:: What is that?

Socrates:: That their accounts are for the sake of knowing what always is, not what comes into being and passes away.

Glaucon:: That's easy to agree to, for geometry is knowledge of what always is.

Socrates:: Then it draws the soul towards truth and produces philosophic thought by directing upwards what we now wrongly direct downwards.

Glaucon:: As far as anything possibly can.

Socrates:: Then as far as we possibly can, we must require those in your fine city not to neglect geometry in any way, for even its by-products are not insignificant.

Glaucon:: What are they?

Socrates:: The ones concerned with war that you mentioned. But we also surely know that, when it comes to better understanding any subject, there is a world of difference between someone who has grasped geometry and someone who hasn't.

Glaucon:: Yes, by god, a world of difference.

Socrates:: Then shall we set this down as a second subject for the young?

Glaucon:: Let's do so. *Republic*, Plato, by G.M.A. Grube and rev. C.D.C. Reeve

Glaucon:: You mean geometry?

Socrates:: Exactly so.

Glaucon:: Clearly, we are concerned with that part of geometry which relates to war; for in pitching a camp, or taking up a position, or closing or extending the lines of an army, or any other military manœuvre, whether in actual battle or on a march, it will make all the difference whether a general is or is not a geometrician.

Socrates:: Yes, but for that purpose a very little of either geometry or calculation will be enough; the question relates rather to the greater and more advanced part of geometry—whether that tends in any degree to make more easy the vision of the idea of good; and thither, as I was saying, all things tend which compel the soul to turn her gaze towards that place, where is the full perfection of being, which she ought, by all means, to behold.

Glaucon:: True.

Socrates:: Then if geometry compels us to view being, it concerns us; if becoming only, it does not concern us?

Glaucon:: Yes, that is what we assert.

Socrates:: Yet anybody who has the least acquaintance with geometry will not deny that such a conception of the science is in flat contradiction to the ordinary language of geometricians.

Glaucon:: How so?

Socrates:: They have in view practice only, and are always speaking, in a narrow and ridiculous manner, of squaring and extending and applying and the like—they confuse the necessities of geometry with those of daily life; whereas knowledge is the real object of the whole science.

Glaucon:: Certainly.

Socrates:: Then must not a further admission be made?

Glaucon:: What admission?

Socrates:: That the knowledge at which geometry aims is knowledge of the eternal, and not of aught perishing and transient.

Glaucon:: That, may be readily allowed, and is true.

Socrates:: Then, my noble friend, geometry will draw the soul towards truth, and create the spirit of philosophy, and raise up that which is now unhappily allowed to fall down.

Glaucon:: Nothing will be more likely to have such an effect.

Socrates:: Then nothing should be more sternly laid down than that the inhabitants of your fair city should by all means learn geometry. Moreover the science has indirect effects, which are not small.

Glaucon:: Of what kind?

Socrates:: There are the military advantages of which you spoke, and in all departments of knowledge, as experience proves, any one who has studied geometry is infinitely quicker of apprehension than one who has not.

Glaucon:: Yes indeed, there is an infinite difference between them.

Socrates:: Then shall we propose this as a second branch of knowledge which our youth will study?

Glaucon:: Let us do so. *Republic*, Plato, by Jowett 3rd ed.

Glaucon:: 'What is that? Do you mean geometry?'

Socrates:: 'Just that.'

Glaucon:: 'Obviously, so much of it as applies to warlike operations is suitable. In pitching camp, occupying positions, closing up or deploying an army, and generally in executing other manoeuvres on the field of battle or on the march, it will make a difference whether a man is a geometrician or not.'

Socrates:: 'Yes, but for such purposes quite a little geometry and calculation is sufficient. For the greater and the more advanced portion we must consider whether it tends to the other result, to making it easier to perceive the Form of the good. All things have this tendency, we say, if they compel the soul to turn towards that region which contains that most blissful sphere of being which it is most necessary for the soul to see.'

Glaucon:: 'You are right.'

Socrates:: 'Then if it compels us to behold being, it is suitable; if to behold becoming, it is unsuitable?'

Glaucon:: 'That is our statement.'

Socrates:: 'But none who have even a slight acquaintance with geometry, will deny that the nature of this science is in exact contradiction to the arguments used in it by its professors.'

Glaucon:: 'In what way?'

Socrates:: 'Well, they talk in most ridiculous and beggarly fashion; for they speak like men of business, and as though all their demonstrations had a practical aim, with their talk of squaring and applying and adding, and so on. But surely the whole study is carried on for the sake of knowledge.'

Glaucon:: 'Most certainly.'

Socrates:: 'Then must we not admit this further point?'

Glaucon:: 'What?

Socrates:: 'That it is for the knowledge of that which always is, not of that which at some particular place and time is becoming and perishing.'

Glaucon:: 'That may well be agreed. For geometrical knowledge is of that which always is.'

Socrates:: 'Then, my fine fellow, it will draw the 's towards truth and complete the philosophic understanding, making us raise upwards what now we wrongly direct downwards?'

Glaucon:: 'Yes, it will do that as far as may be.'

Socrates:: 'Then you must prescribe, as far as may be, that those in your City Beautiful shall in no way neglect geometry. Its accidental advantages also are by no means unimportant.'

Glaucon:: 'Which?

Socrates:: 'Those you mentioned, which concern war. And, for that matter, in all forms of study where we wish to ensure ready understanding, we know perfectly well that there is all the difference in the world between one who has studied geometry and one who has not.'

Glaucon:: 'Yes, certainly, all the difference.'

Socrates:: 'Then shall we decide upon this as a second study for our young men?'

Glaucon:: 'Yes.' *Republic*, Plato, by A. D. Lindsay

Gods

"When, therefore, man had become partaker of a divine condition, first of all through this relationship to deity, he alone of all animals acknowledged gods, and set about building altars and statues of gods:" Protagoras, by Plato.

Good and Evil

"Socrates: What then is the result of what has been said? Is not this the result, that other things are indifferent, and that wisdom is the only good, and ignorance the only evil?" ***Euthydemus***, by Plato: Jowett.

Human Action

"Socrates: O Euthydemus, I said, I have but a dull conception of these subtleties and excellent devices of wisdom; I am afraid that I hardly understand them, and you must forgive me therefore if I ask a very stupid question; if there be no falsehood or false opinion or ignorance, there can be no such thing as erroneous action, for a man cannot fail of acting as he is acting, that is what you mean?" ***Euthydemus***, by Plato: Jowett

Simile in Multis

For a man must have intelligence of universals, and be able to proceed from the many particulars of sense to one conception of reason;—this is the recollection of those things which our soul once saw while following God—when regardless of that which we now call being she raised her head up towards the true being. And therefore the mind of the philosopher alone has wings; and this is just, for he is always, according to the measure of his abilities, clinging in recollection to those things in which God abides, and in beholding which He is what He is. And he who employs aright these memories is ever being initiated into perfect mysteries and alone becomes truly perfect. *Phaedrus* by Plato. Jowett

Language as Image

Socrates: The first would be to make one's thought clear by the voice, through the means of verbs and nouns, impressing one's judgment on what flows from the mouth, as it were [reflected] on a mirror, or [by] water; does not logos appear to you to be something of this kind?

Theaetetus: It does: and we say that he who does this speaks. *Theaetetus*, by Plato.

Law

"To lead a man into paradoxes of this sort is the same as to lead him into the opposition of the standards of nature and law: for the law represents the opinion of the majority, whereas philosophers speak according to the standard of nature and the truth." *On Sophistical Refutation* by Aristotle. W. D. Ross.

being obedient to as much of immortality as is inherent in our nature, we should govern both publicly and privately our houses and cities, calling law the distribution of intellect. *Laws* by Plato, Taylor

Socrates∷ Law tends none the less to be discovery of reality: but men, who do not use always the same laws, as we observe, are not always able to discover what the law is intent on—reality. Minos by Plato, Lamb

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Man is the Measure

Protagoras: “Man is the measure of all things.”

Socrates. You appear, indeed, to have given no mean definition of science, but that which Protagoras has given; but he said the same thing in a different manner. For he says that man is the measure of all things, of the existence of those that exist, and of the non-existence of those that do not exist. You have doubtless read this? *Theætetus* Bohn.

Socrates. But would you say, Hermogenes, that the things differ as the names differ ? and are they relative to individuals, as Protagoras tells us? For he says that man is the measure of all things, and that things are to me as they appear to me, and that they are to you as they appear to you. Do you agree with him, or would you say that things have a permanent essence of their own? Craylus, Plato, Jowett

Memory and Recollection

Socrates:: I have heard then, that at Naucratis, in Egypt, there was one of the ancient gods of that country, to whom was consecrated the bird, which they call Ibis; but the name of the deity himself was Theuth. That he was the first to invent numbers and arithmetic, and geometry and astronomy, and moreover draughts and dice, and especially letters, at the time when Thamus was king of all Egypt, and dwelt in the great city of the upper region which the Greeks call Egyptian Thebes, but the god they call Ammon; to him Theuth went and showed him his arts, and told him that they ought to be distributed amongst the rest of the Egyptians. Thamus asked him what was the use of each, and as he explained it, according as he appeared to say well or ill, he either blamed or praised them.

Now Thamus is reported to have said many things to Theuth respecting each art, both for and against it, which it would be tedious to relate. But when they came to the letters, "This knowledge, O king," said Theuth, "will make the 'Egyptians wiser, and better able to remember; for it has been invented as a medicine for memory and wisdom." But he replied, "Most ingenious Theuth, one person is able to give birth to art, another to judge of what amount of detriment or advantage it will be to those who are to use it, and now you, as being the father of letters, out of fondness have attributed to them just the contrary effect to that which they will have. For this invention will produce forgetfulness in the minds of those who learn it through the neglect of memory, for that through trusting to writing, they will remember outwardly by means of foreign marks, and not inwardly by means of their own faculties. So that you have not discovered a medicine for memory, but for recollection. And you are providing for your disciples the appearance and not the reality of wisdom. For hearing many things through your means without instruction, they will appear to know a great deal, although they are for the most part ignorant, and will become troublesome associates, through thinking themselves wise instead of being so." *Phaedrus* by Plato, Cary

Socrates:: I heard, then, that at Naucratis, in Egypt, was one of the ancient gods of that country, the one whose sacred bird is called the ibis, and the name of the god himself was Theuth. He it was who invented numbers and arithmetic and geometry and astronomy, also draughts and dice, and, most important of all, letters. Now the king of all Egypt at that time was the god Thamus, who lived in the great city of the upper region, which the Greeks call the Egyptian Thebes, and they call the god himself Ammon. To him came Theuth to show his inventions, saying that they ought to be imparted to the other Egyptians. But Thamus asked what use there was in each, and as Theuth enumerated their uses, expressed praise or blame, according as he approved or disapproved. The story goes that Thamus said many things to Theuth in praise or blame of the various arts, which it would take too long to repeat; but when they came to the letters, This invention, O king, said Theuth, will make the Egyptians wiser and will improve their memories; for it is an elixir of memory and wisdom that I have discovered. But Thamus replied, Most ingenious Theuth, one man has the ability to beget arts, but the ability to judge of their usefulness or harmfulness to their users belongs to another; and now you, who are the father of letters, have been led by your affection to ascribe to them a power the opposite of that which they really possess. For this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by external characters which are no part of themselves, will

discourage the use of their own memory within them. You have invented an elixir not of memory, but of reminding; and you offer your pupils the appearance of wisdom, not true wisdom, for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant and hard to get along with, since they are not wise, but only appear wise. *Phaedrus* by Plato, Fowler

Socrates:: I can tell you the tradition that has come down from our forefathers, but they alone know the truth of it. However, if we could discover that for ourselves, should we still be concerned with the fancies of mankind?

Phaedrus:: What a ridiculous question! But tell me the tradition you speak of.

Socrates:: Very well. The story is that in the region of Naucratis in Egypt there dwelt one of the old gods of the country, the god to whom the bird called Ibis is sacred, his own name being Theuth. He it was that invented number and calculation, geometry and astronomy, not to speak of draughts and dice, and above all writing. Now the king of the whole country at that time was Thamus, who dwelt in the great city of Upper Egypt which the Greeks call Egyptian Thebes, while Thamus they call Ammon. To him came Theuth, and revealed his arts, saying that they ought to be passed on to the Egyptians in general. Thamus asked what was the use of them all, and when Theuth explained, he condemned what he thought the bad points and praised what he thought the good. On each art, we are told, Thamus had plenty of views both for and against; it would take too long to give them in detail. But when it came to writing Theuth said, 'Here, O king, is a branch of learning that will make the people of Egypt wiser and improve their memories; my discovery provides a recipe for memory and wisdom.' But the king answered and said, 'O man full of arts, to one it is given to create the things of art, and to another to judge what measure of harm and of profit they have for those that shall employ them. And so it is that you, by reason of your tender regard for the writing that is your offspring, have declared the very opposite of its true effect. If men learn this, it will implant forgetfulness in their souls; they will cease to exercise memory because they rely on that which is written, calling things to remembrance no longer from within themselves, but by means of external marks. What you have discovered is a recipe not for memory, but for reminder. And it is no true wisdom that you offer your disciples, but only its semblance, for by telling them of many things without teaching them you will make them seem to know much, while for the most part they know nothing, and as men filled, not with wisdom, but with the conceit of wisdom, they will be a burden to their fellows.' *Phaedrus* by Plato, Hackforth

Socrates:: I have heard a tradition of the ancients, whether true or not they only know; although if we had found the truth ourselves, do you think that we should care much about the opinions of men?

Phaedrus:: Your question needs no answer; but I wish that you would tell me what you say that you have heard.

Socrates:: At the Egyptian city of Naucratis, there was a famous old god, whose name was Theuth; the bird which is called the Ibis is sacred to him, and he was the inventor of many arts, such as arithmetic and calculation and geometry and astronomy and draughts and dice, but his great discovery was the use of letters. Now in those days the god Thamus was the king of the whole country of Egypt; and he dwelt in that great city of Upper Egypt which

the Hellenes call Egyptian Thebes, and the god himself is called by them Ammon. To him came Theuth and showed his inventions, desiring that the other Egyptians might be allowed to have the benefit of them; he enumerated them, and Thamus enquired about their several uses, and praised some of them and censured others, as he approved or disapproved of them. It would take a long time to repeat all that Thamus said to Theuth in praise or blame of the various arts. But when they came to letters, This, said Theuth, will make the Egyptians wiser and give them better memories; it is a specific both for the memory and for the wit. Thamus replied: O most ingenious Theuth, the parent or inventor of an art is not always the best judge of the utility or inutility of his own inventions to the users of them. And in this instance, you who are the father of letters, from a paternal love of your own children have been led to attribute to them a quality which they cannot have; for this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality. *Phaedrus* by Plato, Jowett 3rd ed

Socrates:: Well, this is what I've heard. Among the ancient gods of Naucratis in Egypt there was one to whom the bird called the ibis is sacred. The name of that divinity was Theuth, and it was he who first discovered number and calculation, geometry and astronomy, as well as the games of checkers and dice, and, above all else, writing.

Now the king of all Egypt at that time was Thamus, who lived in the great city in the upper region that the Greeks call Egyptian Thebes; Thamus they call Ammon. Theuth came to exhibit his arts to him and urged him to disseminate them to all the Egyptians. Thamus asked him about the usefulness of each art, and while Theuth was explaining it, Thamus praised him for whatever he thought was right in his explanations and criticized him for whatever he thought was wrong.

The story goes that Thamus said much to Theuth, both for and against each art, which it would take too long to repeat. But when they came to writing, Theuth said: "O King, here is something that, once learned, will make the Egyptians wiser and will improve their memory; I have discovered a potion for memory and for wisdom." Thamus, however, replied: "O most expert Theuth, one man can give birth to the elements of an art, but only another can judge how they can benefit or harm those who will use them. And now, since you are the father of writing, your affection for it has made you describe its effects as the opposite of what they really are. In fact, it will introduce forgetfulness into the soul of those who learn it: they will not practice using their memory because they will put their trust in writing, which is external and depends on signs that belong to others, instead of trying to remember from the inside, completely on their own. You have not discovered a potion for remembering, but for reminding; you provide your students with the appearance of wisdom, not with its reality. Your invention will enable them to hear many things without being properly taught, and they will imagine that they have come to know much while for the most part they will know nothing. And they will be difficult to get along with, since they will merely appear to be wise instead of really being so." *Phaedrus* by Plato, Nehamas and Woodruff

Socrates:: I have heard then, that about Naucratis, in Egypt, there was one of their ancient Gods, to whom a bird was sacred, which they call This; but the name of the dæmon himself was Theuth. According to tradition, this God first discovered number and the art of reckoning, geometry and astronomy, the games of chess and hazard, and likewise letters. But Thamus was at that time king of all Egypt, and resided in that great city of the Upper Egypt which the Greeks call Egyptian Thebes; but the God himself they denominate Ammon. Theuth, therefore, departing to Thamus, showed him his arts, and told him that he ought to distribute them amongst the other Egyptians. But Thamus asked him concerning the utility of each; and upon his informing him, he approved what appeared to him to be will said, but blamed that which had a contrary aspect. But Theuth is reported to have fully unfolded to Thamus many particulars respecting each art, which it would be too prolix to mention. But when they came to discourse upon letters, This discipline, O king, says Theuth, will render the Egyptians wiser, and increase their powers of memory. For this invention is the medicine of memory and wisdom. To this Thamus replied, O most artificial Theuth, one person is more adapted to artificial operations, but another to judging what detriment or advantage will arise from the use of these productions of art: and now you who are the father of letters, through the benevolence of your disposition, have affirmed just the contrary of what letters are able to effect. For these, through the negligence of recollection, will produce oblivion in the soul of the learner; because, through trusting to the external and foreign marks of writing, they will not exercise the internal powers of recollection. So that you have not discovered the medicine of memory, but of admonition. You will likewise deliver to your disciples an opinion of wisdom, and not truth. For, in consequence of having many readers without the instruction of a master, the multitude will appear to be knowing in many things of which they are at the same time ignorant; and will become troublesome associates, in consequence of possessing an opinion of wisdom, instead of wisdom itself. *Phaedrus* by Plato, Taylor

Socrates:: Well, I heard that in the neighbor hood of Naucratis, in Egypt, there lived one of the ancient gods of that country; the same to whom that holy bird is consecrated which they call, as you know, Ibis, and whose own name was Theuth. He, they proceed, was the first to invent numbers and arithmetic, and geometry and astronomy; draughts more over, and dice, and, above all, letters. Now the whole of Egypt was at that time under the sway of the god Thamus, who resided near the capital city of the upper region, which the Greeks call Egyptian Thebes. The god himself they call Ammon. To him, there fore, Theuth repaired; and, displaying his inventions, recommended their general diffusion among the Egyptians. The king asked him the use of each, and received his explanations, as he thought them good or bad, with praise or censure. Now on each of the arts Thamus is reported to have said a great deal to Theuth, both in its favor and disfavor. It would take a long story to repeat it all. But when they came to the letters, Theuth began; This invention, O king, will make the Egyptians wiser, and better able to remember, it being a medicine which I have discovered both for memory and wisdom. The king replied; Most ingenious Theuth, one man is capable of giving birth to an art, another of estimating the amount of good or harm it will do to those who are intended to use it. And so now you, as being the father of letters, have ascribed to them, in your fondness, exactly the reverse of their real effects. For this invention of yours will produce forgetfulness in

the minds of those who learn it, by causing them to neglect their memory, inasmuch as, from their confidence in writing, they will recollect by the external aid of foreign symbols, and not by the internal use of their own faculties. Your discovery, there fore, is a medicine not for memory, but for recollection, for recalling to, not for keeping in mind. And you are providing for your disciples a show of wisdom without the reality. For, acquiring by your means much information unaided by instruction, they will appear to possess much knowledge, while, in fact, they will, for the most part, know nothing at all; and, more over, be disagreeable people to deal with, as having become wise in their own conceit, in stead of truly wise. *Phaedrus* by Plato, Wright

Efficacy of Names.

I think that you will acknowledge with me, that one principle is applicable to all names, primary as well as secondary, when they are regarded simply as names, there is no difference in them. Cratylus by Plato.

How real existence is to be studied or discovered is, I suspect, beyond you and me. But we may admit so much, that the knowledge of things is not to be derived from names. No; they must be studied and investigated in themselves. Cratylus by Plato.

Well, but do you not see, Cratylus, that he who follows names in the search after things, and analyses their meaning, is in great danger of being deceived? Cratylus by Plato.

no man of sense will like to put himself or the education of his mind in the power of names; neither will he so far trust names or the givers of names as to be confident in any knowledge which condemns himself and other existences to an unhealthy state of unreality; he will not believe that all things leak like a pot, or imagine that the world is a man who has a running at the nose. Cratylus by Plato.

Nouns and Verbs

SOCRATES: Does what I am saying apply only to the things themselves, or equally to the actions which proceed from them? Are not actions also a class of being?

HERMOGENES. Yes, the actions are real as well as the things. ***Cratylus*** by Plato, Jowett, 3rd ed.

STRANGER. What I thought that you intended when you gave your assent; for there are two sorts of intimation of being which are given by the voice.

THEAETETUS: What are they?

STRANGER. One of them is called nouns, and the other verbs.

THEAETETUS: Describe them.

STRANGER. That which denotes action we call a verb.

THEAETETUS: True.

STRANGER. And the other, which is an articulate mark set on those who do the actions, we call a noun. ***The Sophist*** by Plato, Jowett, 3rd ed.

"Socrates: And if he similarly asked what colour is, and you answered whiteness, and the questioner rejoined, Would you say that whiteness is colour or a colour? you would reply, A colour, because there are other colours as well." Meno by Plato.

Excerpts from Phaedrus by Plato

translated by Benjamin Jowett

Plato tells the reader what the dialog is for, but other's insist it is about love.

"Shall we discuss the rules of writing and speech as we were proposing?"

Words not paired with experience, or words without wisdom.

"And in this instance, you who are the father of letters, from a paternal love of your own children have been led to attribute to them a quality which they cannot have; for this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality."

"He would be a very simple person, and quite a stranger to the oracles of Thamus or Ammon, who should leave in writing or receive in writing any art under the idea that the written word would be intelligible or certain; or who deemed that writing was at all better than knowledge and recollection of the same matters?"

Define your terms.

"Here he appears to have done just the reverse of what he ought; for he has begun at the end, and is swimming on his back through the flood to the place of starting. His address to the fair youth begins where the lover would have ended."

"Then as to the other topics—are they not thrown down anyhow? Is there any principle in them? Why should the next topic follow next in order, or any other topic?"

In Geometry, what has a beginning, a middle, and end? What is a relative between correlatives?

"At any rate, you will allow that every discourse ought to be a living creature, having a body of its own and a head and feet; there should be a middle, beginning, and end, adapted to one another and to the whole?"

"I mean to say that the composition was mostly playful. Yet in these chance fancies of the hour were involved two principles of which we should be too glad to have a clearer description if art could give us one."

"First, the comprehension of scattered particulars in one idea; as in our definition of love, which whether true or false certainly gave clearness and consistency to the discourse, the speaker should define his several notions and so make his meaning clear."

This same idea is repeated in the pair Sophist and Statesman.

"The second principle is that of division into species according to the natural formation, where the joint is, not breaking any part as a bad carver might."

Noun (the one) and Verb (the many), but starting from the verb is called Pattern Recognition. The definitive sentence, also called Geometric Reasoning, Proportional Reasoning, and Metaphorical Reasoning.

"I am myself a great lover of these processes of division and generalization; they help me to speak and to think. And if I find any man who is able to see "a One and Many" in nature, him I follow, and "walk in his footsteps as if he were a god." And those who have this art, I have hitherto been in the habit of calling dialecticians;"

"For a man must have intelligence of universals, and be able to proceed from the many particulars of sense to one conception of reason;—this is the recollection of those things which our soul once saw while following God—when regardless of that which we now call being she raised her head up towards the true being."

Number

“he who never looks for number in anything, will not himself be looked for in the number of famous men.” Philebus, by Plato, Jowett.

Oak

SOCRATES: But, my friend, those who dwell in the temple of Dodonsean Jupiter said that the first prophetic words issued from an oak. It was sufficient for the men of those days, seeing they were not wise like you moderns, in their simplicity, to listen to an oak and a stone, if only they spoke the truth; and does it make any difference to you, forsooth, who the speaker is, and to what country he belongs? For you do not consider that only, whether the case is so or otherwise. *Phaedrus*, by Plato, Bohm

SOCRATES: Oh, but the authorities of the temple of Zeus at Dodona, my friend, said that the first prophetic utterances came from an oak tree. In fact the people of those days, lacking the wisdom of you young people, were content in their simplicity to listen to trees or rocks, provided these told the truth. For you apparently it makes a difference who the speaker is, and what country he comes from; you don't merely ask whether what he says is true or false. *Phaedrus*, by Plato, Hackforth

SOCRATES: There was a tradition in the temple of Dodona that oaks first gave prophetic utterances. The men of old, unlike in their simplicity to young philosophy, deemed that if they heard the truth even from 'oak or rock,' it was enough for them; whereas you seem to consider not whether a thing is or is not true, but who the speaker is and from what country the tale comes. *Phaedrus* by Plato

On Definition

Socrates: Hear, then, a dream for a dream. For I too seem to myself to have heard some people say, that the first elements, as it were, from which we and all other things are composed, cannot be explained by reason; for that each several element by itself can only be named, but that nothing else can be predicated of it, neither that it exists nor does not exist; for that this would be to attribute to it existence or non-existence, whereas nothing ought to be added to it, if one means to speak of the thing itself only; neither must we add to it the term the, or that, or each, or only, or this, or many others of the same kind; for these are constantly varying and are applied to all things, and are different from the things to which they are added. But we ought, if it were possible, to speak of the thing itself, and, if it has a definition peculiar to itself, to speak of it without the addition of any thing else. ***Now, however, it is impossible for any of the first elements to be explained by a definition, for it does not admit of any thing else than being named, for it has only a name; but the things that have been composed from these, as they are complex, so their names, when connected together, constitute a definition for a connection of names is the essence of definition. Thus the elements themselves cannot be defined or known, but only perceived, but things compounded of them can be both known and defined, and apprehended by true judgment***. When, therefore, any one forms a true judgment of any thing, without explanation, his soul indeed perceives the truth respecting it, but does not know it, for he who is not able to give and receive an explanation of a thing must be ignorant of that thing, but when he adds an explanation to it then he is capable of knowing all these things, and may be perfect in science. Is it thus that you have heard the dream, or in some other way? Theaetetus by Plato, Bohn.

On Education:

"Pleasure and pain, I maintain to be the first perceptions of children, and I say that they are the forms under which virtue and vice are originally present to them. As to wisdom and true and fixed opinions, happy is the man who acquires them, even when declining in years; and we may say that he who possesses them, and the blessings which are contained in them, is a perfect man. Now I mean by education that training which is given by suitable habits to the first instincts of virtue in children; when pleasure, and friendship, and pain, and hatred, are rightly implanted in souls not yet capable of understanding the nature of them, and who find them, after they have attained reason, to be in harmony with her. This harmony of the soul, taken as a whole, is virtue; but the particular training in respect of pleasure and pain, which leads you always to hate what you ought to hate, and love what you ought to love from the beginning of life to the end, may be separated off; and, in my view, will be rightly called education." ***Laws*** by Plato

Exercises in Judgment.

SOCRATES: I am myself a great lover of these processes of division and generalization; they help me to speak and to think. And if I find any man who is able to see 'a One and Many' in nature, him I follow, and 'walk in his footsteps as if he were a god.' And those who have this art, I have hitherto been in the habit of calling dialecticians; but God knows whether the name is right or not. ***Phaedrus*** by Plato

Games to develop that exercise judgment through class and member identification.

Do it straight and then do it brining in appearance.

Given two items, denote a common characteristic.

Given a number of items, select another from an assortment that belongs in the same set.

Give a definition of a class, then use one member in some situation and see .

Find the missing member. Metaphor.

The Philosopher

"But as to those then who are able to approach this beauty itself, and to behold it as it is in itself, must they not be few in number? Extremely so. He then who accounts some things beautiful, but neither knows beauty itself, nor is able to follow if one were to lead him to the knowledge of it, does he seem to you to live in a dream, or to be awake? Consider now, what is it to dream? Is it not this, when a man, whether asleep or awake, imagines the similitude of a thing is not the similitude, but really the thing itself which it resembles? I for my part would aver, replied he, that such a person is really in a dream. But what now as to him who judges opposite to this, who understands what beauty is itself, and is able to discern both it and such things as participate of it, and neither deems the participants to be beauty, nor beauty to be the participants? whether does such an one seem to you to live awake, or in a dream? Perfectly awake, said he." The Republic, book 5, by Plato, Floyer Sydenham and Thomas Taylor

"I place those of whom we are now discoursing, whom alone we may properly call philosophers. How say you? replied he. The lovers of common stories and spectacles, delight in fine sounds, colours, and figures, and everything made up of these; but the nature of beauty itself their intellect is unable to discern and admire. That is the case, indeed, said he. As to those, however, who are able to approach this beauty itself and behold it in its real essence, surely they must be few in number? Extremely so. He then who deems some things beautiful, but neither knows beauty itself nor is able to follow, should any one lead to the knowledge of it, do you think he lives in a dream, or is awake? consider: is not this to dream, when a man, either asleep or awake, imagines the likeness of a thing not to be its likeness, but the real thing itself which it resembles? I for my part would assert, replied he, that such a person is really in a dream. But what now as to him who comes to an exactly opposite conclusion, who understands the real nature of beauty, and is able to discern both it and its accessories, and deems neither the accessories to be beauty, nor beauty the accessories;—does such a man, think you, live in a waking or dreaming state? Wide awake, said he." *The Republic*, book 5, by Plato, Bohn

"And this is the distinction which I draw between the sight-loving, art-loving, practical class and those of whom I am speaking, and who are alone worthy of the name of philosophers.

How do you distinguish them? he said.

The lovers of sounds and sights, I replied, are, as I conceive, fond of fine tones and colours and forms and all the artificial products that are made out of them, but their mind is incapable of seeing or loving absolute beauty.

True, he replied.

Few are they who are able to attain to the sight of this.

Very true.

And he who, having a sense of beautiful things has no sense of absolute beauty, or who, if another lead him to a knowledge of that beauty is unable to follow—of such an one I ask, Is he awake or in a dream only? Reflect: is not the dreamer, sleeping or waking, one who likens dissimilar things, who puts the copy in the place of the real object?

I should certainly say that such an one was dreaming.

But take the case of the other, who recognises the existence of absolute beauty and is able to distinguish the idea from the objects which participate in the idea, neither putting the objects in the place of the idea nor the idea in the place of the objects—is he a dreamer, or is he awake?

He is wide awake." *The Republic*, book 5, by Plato, B. Jowett 3rd ediction.

Prior Experience

> Athenian: In the first place, a list would have to be made out of those who by their ages and studies and dispositions and habits are well fitted for the duty of a guardian. In the next place, it will not be easy for them to discover themselves what they ought to learn, or become the disciple of one who has already made the discovery. Furthermore, to write down the times at which, and during which, they ought to receive the several kinds of instruction, would be a vain thing; for the learners themselves do not know what is learned to advantage until the knowledge which is the result of learning has found a place in the soul of each. *And so these details, although they could not be truly said to be secret, might be said to be incapable of being stated beforehand, because when stated* ***they would have no meaning***. Book 12, *Laws*, by Plato

This recognition, which lay at the foundation of language, may account for some of the psychological discrepancies of The Laws, with Plato's other works, however, I am not convinced of this. I do not believe that Plato wrote them, but that they are, in fact, the work or either Pythagoras himself, or another Pythagorean. For, many topics in this work, Plato resolves in the dialogs correctly, where in this, they are not.

The Laws, are an attempt to construct the perfect state, called Magnetes.

> Stranger: As the proverb says, the answer is no secret, but open to all of us; We must risk the whole on the chance of throwing, as they say, thrice six or thrice ace, and I am willing to share with you the danger by stating and explaining to you my views about education and nurture, which is the question coming to the surface again. The danger is not a slight or ordinary one, and I would advise you, Cleinias, in particular, to see to the matter; for if you order rightly the city of the Magnetes, or whatever name God may give it, you will obtain the greatest glory; or at any rate you will be thought the most courageous of men in the estimation of posterity. Dear companions, if this our divine assembly can only be established, to them we will hand over the city; none of the present company of legislators, as I may call them, would hesitate about that. And the state will be perfected and become a waking reality, which a little while ago we attempted to create as a dream and in idea only, mingling together reason and mind in one image, in the hope that our citizens might be duly mingled and rightly educated; and being educated, and dwelling in the citadel of the land, might become perfect guardians, such as we have never seen in all our previous life, by reason of the saving virtue which is in them.

Prophecy

Socrates:: Hear then, my dream, no matter whether it has passed through the gate of horn or ivory. For if temperance ruled us ever so much, would it not, being such as we have now defined it, be acted upon according to the sciences; and neither would he, who boasts to be a pilot when he is not, deceive us; nor would a physician, or a general of an army, or any other person, who pretends to know that, which he does not know, lie hid from us. But from this state of things something else would happen to us; for our bodies would be more healthy than at present, and we should be preserved, when in danger at sea and in war; and all our utensils and garments, and all our shoes, and all the necessaries of life, all things else, would be made more scientifically through our employing true artists. And if you are willing, let us grant that prophecy is the science of that which is to be; and that temperance, presiding over it, turns away the boastful diviners, but appoints over us the true prophets of things to come. Furnished then in this way, the human race would, I concede, act and live scientifically. For temperance being our guard, it would not permit ignorance to interfere and cooperate with us. But that, by acting scientifically, we should do well and be happy, this, friend Critias, I am not yet able to understand. *Charmides* by Plato, George Burges.

Socrates:: Hear, then, my own dream—whether coming through the horn or the ivory gate, I cannot tell. The dream is this. Let us suppose that wisdom is such as we are now defining, and that she has absolute sway over us. Then, each action will be done according to the arts or sciences, and no one professing to be a pilot when he is not, no physician or general or anyone else pretending to know matters of which he is ignorant, will deceive or elude us. Our health will be improved; our safety at sea, and also in battle, will be assured; our coats and shoes, and all other instruments and implements will be skillfully made, because the workmen will be good and true. Aye, and if you please, you may suppose that prophecy will be a real knowledge of the future, and will be under the control of wisdom, who will deter deceivers and set up the true prophets in their place as the revealers of the future. Now I quite agree that mankind, thus provided, would live and act according to knowledge, for wisdom would watch and prevent ignorance from intruding on us in our work. But whether by acting according to knowledge we shall act well and be happy, my dear Critias—this is a point which we have not yet been able to determine. *Charmides* by Plato, Benjamin Jowett.

Socrates:: Hear then, my dream, whether it has come through horn or through ivory. Suppose that temperance were such as we now define her, and that she had entire control of us: must it not be that every act would be done according to the sciences, and no one professing to be a pilot when he was not would deceive us, nor would a doctor, nor a general, nor anyone else pretending to know something he did not know, go undetected; and would not these conditions result in our having greater bodily health than we have now, safety in

perils of the sea and war, and skilful workmanship in all our utensils, our clothes, our shoes, nay, everything about us, and various things besides, because we should be employing genuine craftsmen? And if you liked, we might concede that prophecy, as the knowledge of what is to be, and temperance directing her, will deter the charlatans, and establish the true prophets as our prognosticators. Thus equipped, the human race would indeed act and live according to knowledge, I grant you (for temperance, on the watch, would not suffer ignorance to foist herself in and take a hand in our labors), but that by acting according to knowledge we should do well and be happy—this is a point which as yet we are unable to make out, my dear Critias. *Charmides* by Plato, Lamb.

Socrates:: "Listen then, to my dream, to see whether it comes through horn or through ivory. If temperance really ruled over us and were as we now define it, surely everything would be done according to science: neither would anyone who says he is a pilot (but is not) deceive us, nor would any doctor or general or anyone else pretending to know what he does not know escape our notice. This being the situation, wouldn't we have greater bodily health than we do now, and safety when we are in danger at sea or in battle, and wouldn't we have dishes and all our clothes and shoes and things skillfully made for us, and many other things as well, because we would be employing true craftsmen? And, if you will, let us even agree that the mantic art is knowledge of what is to be and that temperance, directing her, keeps away deceivers and sets up the true seers as prophets of the future. I grant that the human race, if thus equipped, would act and live in a scientific way—because temperance, watching over it, would not allow the absence of science to creep in and become our accomplice. But whether acting scientifically would make us fare well and be happy, this we have yet to learn, my dear Critias." *Charmides* by Plato, Rosamond Kent Sprague.

Socrates:: Hear then, my dream, whether it has passed through the gate of horn, or through that of ivory. For if temperance should govern us, being such as we have now defined it to be, it would indeed act scientifically; nor would he who asserts himself to be a pilot, when he is not, deceive us; nor would a physician, nor a general of an army, nor any other who pretends to know that which he does not know, elude our penetration. But from these things thus subsisting, something else would happen to us; for our bodies would be more healthful than they are at present, and we should be preserved in the perils of the sea and war. We should likewise possess all our vessels and instruments, together with our garments, shoes, and all the conveniences and necessaries of life, more artificially constructed than at present, because we should employ true artists. If also you are willing we should grant that prophecy is the science of that which is future, and that temperance presiding over it, avoids arrogant diviners, but chooses true prophets for the prediction of future events, I should affirm that the human race, furnished with this, would act and live scientifically. For temperance being our guard, it will not suffer ignorance interfering to

cooperate with us. But that we shall act well and be happy, in consequence of acting scientifically, this, friend Critias, I am not yet able to understand. *Charmides* by Plato, Thomas Taylor.

Representation

Socrates: Then if you admit that primitive or first nouns are representations of things, is there any better way of framing representations than by assimilating them to the objects as much as you can; or do you prefer the notion of Hermogenes and of many others, who say that names are conventional, and have a meaning to those who have agreed about them, and who have previous knowledge of the things intended by them, and that convention is the only principle; and whether you abide by our present convention, or make a new and opposite one, according to which you call small great and great small-that, they would say, makes no difference, if you are only agreed. Which of these two notions do you prefer?

Cratylus: Representation by likeness, Socrates, is infinitely better than representation by any chance sign.

Socrates: Very good: but if the name is to be like the thing, the letters out of which the first names are composed must also be like things. Cratylus, by Plato. Jowett. 3rd ed.

Republic

> "Will you, then, restore me what you borrowed in the reasoning? What, chiefly? I granted you, that the just man should be deemed unjust, and the unjust be deemed to be just. For you were of opinion, that though it were not possible that these things should be concealed from gods and men, it should, however, be granted, for the sake of the argument, that justice in itself might be compared with injustice in itself; do you not remember it? I should, indeed, be unjust, said he, if I did not." ~ "For I will aver now, that the just, when they are grown up, shall arrive at power if they desire magistracies, they shall marry where they incline, and shall settle their children in marriage agreeably to their wishes; and everything else you mentioned concerning the others, I now say concerning these." *Republic*, book 10, by Plato, Bohn

And, it is worth mentioning, in those dialogs, which concern moral concepts which the participants did not grasp the concepts, Plato closes with a terrifying or consoling myth.

Gender Equality

"Besides, the figure and image of the goddess shows that at that time both men and women entered in common on the pursuits of war; as in compliance with that custom an armed statue was dedicated to the goddess by the people of that day, a proof that all animals that consort together, females as well as males, have a natural ability to pursue in common every suitable virtue." *Critias*, Plato. Bohm

Standard of Behavior

And shall we say that the violence, if exercised by a rich man, is just, and if by a poor man, unjust? May not any man, rich or poor, with or without laws, with the will of the citizens or against the will of the citizens, do what is for their interest? Is not this the true principle of government, according to which the wise and good man will order the affairs of his subjects? As the pilot, by watching continually over the interests of the ship and of the crew, not by laying down rules, but by making his art a law, preserves the lives of his fellow-sailors, even so, and in the self-same way, may there not be a true form of polity created by those who are able to govern in a similar spirit, and who show a strength of art which is superior to the law? Nor can wise rulers ever err while they Observing the one great rule of distributing justice to the citizens with intelligence and skill, are able to preserve them, and, as far as may be, to make them better from being worse. *The Statesman* by Plato, Jowett.

Standard

Will not the good man, who says whatever he says with a view to the best, speak with a reference to some standard and not at random; just as all other artists, whether the painter, the builder, the shipwright, or any other look all of them to their own work, and do not select and apply at random what they apply, but strive to give a definite form to it? Gorgias by Plato, Jowett, 3rd ed.

“temperance is the knowledge of self, in respect of his art” ***Alcibiades I,*** Plato

Alcibiades.

One may take Alcibiades I as an introduction to the dialogs for in them Plato introduces what the dialogs are all about. As is Plato’s style, he takes the greatest example, in this case a person with the greatest desire. Then he distinguishes between body and mind, and then leads one to understand that all of human desire is accomplished through the art of the mind. The art of the mind is our own work. The mind functions through the artifice of language, therefore our competence is to acquire what we will. Therefore, Plato choose the greatest evil to start with—Alcibiades—a man, as he observes in the text, who was completely out of his mind.

The Unit

“that branch of science which concerns unity would be among those which lead and turn the soul to the contemplation of real being.” The Republic, book 7, by Plato, Bohn

Good mathematicians, as of course you know, scornfully reject any attempt to cut up the unit itself into parts: if you try to break it up small, they will multiply it up again, taking good care that the unit shall never lose its oneness and appear as a multitude of parts.

And if they are asked what are these numbers they are talking about, in which every unit, as they claim, is exactly equal to every other and contains no parts, what would be their answer?

This, I should say: that the numbers they mean can only be conceived by thought: there is no other way of dealing with them. *Republic*, by Plato, Cornford.

Three Fundamentals.

SOCRATES: And so do I. But since we are thus disposed, let us in a quiet manner, as being abundantly at leisure, again consider, not morosely, but examining ourselves in reality, what the nature is of these appearances within us. And, on the first consideration of these, we shall say (as I think) that ***nothing at any time ever becomes greater or lesser, neither in bulk, nor in number, as long as it is equal to itself***. Is it not so?

Theætetus: It is.

SOCRATES: And, in the second place, ***that to which nothing is either added or taken away, will neither at any time ever be increased, or corrupted, but will always be equal***.

THEÆTETUS: And, indeed, very much so.

SOCRATES: And shall we not also say, in the third place, ***that a thing which was not formerly, but subsists afterwards, cannot exist without making and being made***?

SOCRATES: These three things, then, which are acknowledged by us, oppose each other in a hostile manner in our soul, when we speak about dice, as above, or when we say that I, who am so old, am neither increased, nor suffer a contrary passion in myself; while you, who are a young man, are now greater, and afterwards less, since nothing is taken away from my bulk, but yours is increased. For, through a length of time, I am what I was not formerly, being no longer in a state of progressive increase: for without making, it is impossible that a thing can be made. But losing nothing of my bulk, I do not at any time become less. And there are ten thousand ether things of this kind, which happen to ten thousand other persons, if we admit these things. Speak, Theætetus: for you appear to me not to be unskilled in things of this kind. *The Theætetus* by Plato, Taylor.

SOCRATES: And so do I. But since this is the case, shall we not quietly, seeing we have abundance of leisure, again consider, not feeling any annoyance, but really examining ourselves, in order to see what those appearances in us are. And on considering them, we shall say in the first place, I think, that ***nothing ever becomes greater or less, either in bulk, or number, as long as it continues equal to itself***. Is it not so?

Theætetus: Yes.

SOCRATES: And, in the second place, that ***a thing to which nothing is either added and from which nothing is taken away, will neither be ever increased or diminished, but always be equal***.

THEÆTETUS: Just so.

SOCRATES: And shall we not say, in the third place, that ***it is impossible for a thing which did not before exist, to exist afterwards, without it has been produced and is produced***.

THEÆTETUS: It seems so, indeed.

SOCRATES: These three admissions, I think, contend with each other in our soul, when we speak about dice, or when we say that I, being of the size lam, having neither increased, nor suffered diminution in the space of a year, am now larger than you, who are a young man, but afterwards less, though n bulk has not been diminished, but yours has been increased. For I am afterwards, what I was not before, without having been made so. *The Theætetus* by Plato, Bohn Library.

SOCRATES: And mine too. But since this is our feeling, and there is plenty of time, why should we not calmly and patiently review our own thoughts, and thoroughly examine and see what these appearances in us really are? If I am not mistaken, they will be described by us as follows:—first, equal to that ***nothing can become greater or less, either in number or magnitude, while remaining equal to itself***—you would agree?

Theætetus: Yes.

SOCRATES: Secondly, that ***without addition or subtraction there is no increase or diminution of anything, but only equality***.

THEÆTETUS: Quite true.

SOCRATES: Thirdly, that ***what was not before cannot be afterwards, without becoming and having become***.

THEÆTETUS: Yes, truly.

SOCRATES: These three axioms, if I am not mistaken, are fighting with one another in our minds in the case of the dice, or, again, in such a case as this—if I were to say that I, who am of a certain height and taller than you, may within a year, without gaining or losing in height, be not so tall—not that I should have lost, but that you would have increased. In such a case, I am afterwards what I once was not, and yet I have not become; for I could not have become without becoming, neither could I have become less without losing somewhat of my height; and I could give you ten thousand examples of similar contradictions, if we admit them at all. I believe that you follow me, Theaetetus; for I suspect that you have thought of these questions before now. *The Theætetus* by Plato, Jowett.

The truth or falsity of a statement depends on facts, and not on any power on the part of the statement itself of admitting contrary qualities. Categories, by Aristotle.

And true opinion is discovery of reality? *Minos*, Plato, Lamb

The Unexamined Life

"If, on the other hand, I say that this is the greatest good to man, to discourse daily on virtue, and other things which you have heard me discussing, examining both myself and others, but that a life without investigation is not worth living for, still less would you believe me if I said this." ***The Apology*** by Plato, Cary

"if I say again that daily to discourse about virtue, and of those other things about which you hear me examining myself and others, is the greatest good of man, and that the unexamined life is not worth living, you are still less likely to believe me." ***The Apology*** by Plato, B. Jowett

What is Science?

Socrates: And now it has been made perfectly clear that science is something different from perception. But we did not commence this conversation with this view, that we might find out what science is not, but what it is. However, we have advanced so far as not to seek it at all in perception, but in that name, whatever it is, which the soul possesses when it employs itself about things that exist.

Theaetetus: But this, I think, Socrates, is called, to judge.

Socrates: You think rightly, my friend. Theaetetus, by Plato. Bohn.

Why Learn?

Note: One might wish to go over this whole speech.

"I say these things to shew that they very properly permit every man to give advice concerning this virtue, because they think that every one partakes of it. But that men think that it exists not naturally or spontaneously, but that it is taught and acquired by study, by whomsoever it is acquired, this I will in the next place endeavour to shew. For whatever evils men think others respectively have by nature or fortune no one is angry with, nor admonishes, or teaches, or punishes the possessors of them, in order to make them otherwise than they are, but pity them. For instance, who would be so foolish as to attempt to do any of these things to the deformed, or the little, or the weak? For they know, I think, that these things, such as are beautiful and the contraries, happen to men by nature and fortune: but such advantages as they think result to men from study, practice, and instruction, if any one does not possess them but their contrary evils, for these things anger, and punishment, and admonition, are had recourse to: of these one is injustice, and so is impiety, and in short, every thing that is contrary to political virtue. Here, then, every man is angry with and admonishes every other, clearly because he thinks it may be acquired by study and instruction. For if you will consider, Socrates, of what avail it is to punish those who act unjustly, this very thing will teach you that men think virtue is to be acquired. For no one punishes those who act unjustly, merely attending to this and for this reason, that any one has so acted, unless it be one who like a brute avenges himself irrationally; but he who endeavours to punish with reason, does not exact vengeance for the sake of past offence, (for what has been done he cannot make undone,) but for the sake of the future, that neither this man himself, nor any other who sees him punished, may again act unjustly. And he who entertains such a thought must think that virtue may be taught; he punishes certainly for the sake of deterring from wickedness. All, therefore, have this opinion who inflict punishment, either privately or publicly. Now all other men, and especially the Athenians, your fellow-citizens, inflict punishment on and correct those who they think act unjustly; so that, according to this reasoning, the Athenians also are among the number of those who think that virtue may be acquired and taught. That your fellow-citizens, therefore, very properly allow a brazier and a shoemaker to give advice in political affairs, and that they think that virtue may be taught and acquired, has been sufficiently demonstrated to you, Socrates, at least as it appears to me. *Protagoras*, by Plato. Bohn.

Wisdom

"Socrates: If therefore wisdom consist in the knowledge of oneself, none of these artificers are wise men by their skill in their respective arts.

Alcibiades: I think they are not." *Alcibiades* 1, Sydenham, *Works of Plato*, Taylor and Sydenham.

"Socrates: Whether then is it not true, my friend Alcibiades, that the soul, if she would know herself, must look at soul, and especially at that place in the soul in which wisdom, the virtue of the soul, is ingenerated; and also at whatever else this virtue of the soul resembles?" *Alcibiades* 1, Sydenham, *Works of Plato*, Taylor and Sydenham.

"Socrates: And to know oneself, we acknowledge to be wisdom." *Alcibiades* 1, Sydenham, *Works of Plato*, Taylor and Sydenham.

Relation to self is inadmissible, therefore, if a person be rational,

Socrates: Is it possible for the same thing, considered in the same relation, to be both at rest and in motion?

Glaucon: By no means.

Socrates: Let us define this more accurately still, lest, as we proceed, we be inclined to waver; for, if one were to say that, when a man stands, though yet moving his hands and head, the same person is at once still and in motion; we should not, I conceive, reckon this a correct mode of speaking, but that one part of him is at rest, and another part in motion; is it not so?

Glaucon: Just so.

Socrates: But if a person arguing thus were to proceed jestingly and facetiously allege that tops are wholly at rest, but yet are at the same time in motion, when, fixed on the same point, they are whirled about their centre, or that anything else going round in a circle in the same position does the same, we should not admit it, as it is not in the same respect that they both stand still and are in motion; but we should say that they have in them the straight line and the circumference; and that, with relation to the axis they are at rest (because it inclines to neither side); but with relation to the circumference, they move in a circle; and again, if, while it is whirling round, its perpendicularity inclines either to the right or the left, forwards or backwards, then it is by no means at rest.

Glaucon: Very right.

Socrates: No assertion then of this kind will frighten us; nor shall any one persuade us, that anything, being one and the same, can do and suffer contraries at one and the same time, in the same respect, and relatively to the same object.

Glaucon: Me, at any rate, he shall not.

Socrates: But once more, not to be tedious in going over and refuting all these quibbles, let us proceed on the supposition, that this is really the case, acknowledging, also, that if at any time these things are found to be different from what they now are, all that we have gained will be lost.

Glaucon: This then, is what we must do.

Socrates: Well then, nodding an assent, and making a sign of dissent, desiring to take a thing and refusing it, attracting or repelling will you reckon all such things contraries respectively, whether actions or passions; for it matters not which?

Glaucon: Contraries, certainly.

Socrates: What then, thirst, hunger, and the desires generally, and further, *to wish and to will*, may not all these be considered as of the same kind with the species just mentioned? As for instance, will you not always say of a man who desires, that his soul aims after what it desires, or attracts to itself what it wishes to have? Or again, so far as the soul wishes

something to be given to it, does it not make a sign for it, as if a person were asking for it, through desire of acquiring its possession?

Glaucon: I should say so.

Socrates: But what? to be unwilling, not to wish, and not to desire, shall we not deem them synonymous with repelling and driving off from the soul, and so all things else that are contrary of the former?

Glaucon: Of course.

Socrates: This being the case, shall we say that there is a certain species of desires, and that the most conspicuous are those which we call thirst and hunger?

Glaucon: We shall say so.

Socrates: Is not one the desire of drinking, the other of eating?

Glaucon: Yes.

Socrates: In the case of thirst then, is it, so far as it is thirst, a desire in the soul of anything more than what we were saying; and as far as thirst goes, is there a thirst for hot drink, or cold, for much or little, or in short for some particular kind of drink? or again, if heat be added to the thirst, will it not readily occasion a desire for cold drink; but if cold then for warm drink; and if the thirst be great, owing to numerous causes, will it not occasion a desire for much drink, but if small, for little; while as for the desire of thirst itself, it never becomes the desire of anything else, but of that only to which it naturally belongs, and so, also, of hunger with reference to meat?

Glaucon: Just so, every desire belongs in itself to that alone of which it is the desire; but whether they be desires of such or such a particular kind, are adventitious circumstances.

Socrates: Let no one then, trouble us, as if we were inadvertent, that no one desires drink, but good drink, nor meat, but good meat; inasmuch as all men desire what is good. If then thirst be a desire, it is one of something good; whether it be of drink, or anything else whatever, and in the same way with all the other desires.

Glaucon: Aye, perhaps, the man who says this may be deemed to say something to the purpose.

Socrates: But in truth, things naturally relative, refer in each particular, as I think, to this or that object, to which they belong, while in their individual character they refer only to themselves individually.

Glaucon: I do not understand.

Socrates: Do not you understand, that greater is relatively greater than something?

Glaucon: Certainly.

Socrates: Is it not greater than the lesser?

Glaucon: Yes.

Socrates: And that which is much greater than that which is much less; is it not?

Glaucon: Yes.

Socrates: And that which was formerly greater than that which was formerly less, and that which is to be greater than that which is to be less?

Glaucon: Of course.

Socrates: And in like manner, the more numerous has reference to the less numerous, and the double to the half, and so in all such-like cases; and further, the heavier to the lighter, and the swifter to the slower; and further still, the hot to the cold; and all such like, are they not thus related?

Glaucon: Entirely so.

Socrates: But what as to the sciences; is not the case the same? for, science itself is the science of pure learning, or of whatever else one sees fit to make it the science; while, on the other hand, a certain particular science, of a particular kind, refers to a certain particular kind, and also to a particular object. My meaning is as follows; when the science of building houses arose, was it not so far separated from the other sciences, as to acquire the name of architecture?

Glaucon: Of course.

Socrates: Was it not so, because it was of a kind like none else?

Glaucon: Yes.

Socrates: Was it not then from its being the art of such a particular thing, that it became itself such a particular art; and are not all other arts and sciences in like manner?

Glaucon: They are so,

Socrates: Consider then, that this is what I wanted to express, if you now understand me; namely, that things which are relative, taken by themselves alone, relate to themselves alone, but considered as of such a quality, relate to particular objects. I do not say, however, that a science altogether resembles that of which it is the science; (as if, for example, the science of healthy and sickly were itself healthy and sickly, or the science of good and evil itself good and evil;) but as science is not constituted the science of that generally of which it is the science, but only of a certain quality of it (that is, of its healthy and sickly state), so it comes to be itself a particular science; and hence it is no longer called simply a science, but the medicinal science, the particular class to which it belongs being superadded.

Glaucon: I understand you; and I think it is so.

Socrates: As for thirst then, will you not class it among those things which have relation to something else, so far as it is what it is? and is not thirst a thirst for something?

Glaucon: I should, certainly, for drink.

Socrates: And does not a particular thirst desire a particular drink? whereas thirst in general is neither of much nor of little, nor of good no bad, nor, in one word, of any particular kind; but abstractly and in general, the natural desire of drink.

Glaucon: Assuredly.

Socrates: The soul of the man then who thirsts, so far as he thirsts, wishes nothing further than to drink; and this he covets, and to this he hurries?

Glaucon: Clearly so.

Socrates: If therefore, when the soul is athirst, anything draws it back, must it not be some different principle from that which excites thirst, and leads it as a wild beast to drink; since it is impossible, we say, for the same thing, by itself, and at the same time, to produce contrary results from the same cause?

Glaucon: It is indeed impossible.

Socrates: Just as it is not proper, methinks, to say of an archer, that his hands at once propel and draw in the bow, but that one of his hands propels it, and the other draws it in?

Glaucon: Assuredly.

Socrates: Can we say, then, that there are some, who when athirst are not willing to drink?

Glaucon: Certainly, many, and often.

Socrates: What then, is one to say of these persons? Might it not be said, that there is something in their soul that prompts them to drink, and likewise something that restrains them, quite different, and that prevails over the prompting principle?

Glaucon: I think so.

Socrates: Does not the restraining principle then, whenever it arises, arise from reason; while those that lead and urge men onwards, proceed from affections and ailments?

Glaucon: It appears so.

Socrates: We shall not then, be unreasonable in defining these as distinctly two, and separate from one another, if we call that with which one reasons, the rational part of the soul, but that part with which it loves, and hungers, and thirsts, and is carried away by desires, the irrational and concupiscent part, as associated with certain gratifications and pleasures.

Glaucon: We shall not; but We may reasonably regard them in this light.

Socrates: Let these two then, be defined as distinct principles in the soul. But as to that of anger, and by which we are angry, is it a third principle, or is it of like nature with one or other of these two?

Glaucon: Perhaps, with one of them, the concupiscent.

Socrates: But I believe, what I have somewhere heard; Leontius, son of Aglaion, as he was returning from the Piraeus, along the outside of the northern wall, perceiving some dead bodies lying close to the place of public punishment, had a desire to look at them, but yet at the same time revolted therefrom and turned away; and for a while he resisted, and covered his eyes, but, at last, overcome by his desire, ran with eyes wide open towards the dead bodies, and said; Here now, ye wretched eyes of mine! glut yourselves with this fine spectacle.

Glaucon: I too have heard it.

Socrates: This story now shows, that anger sometimes opposes the desires, as being distinct from each other.

Glaucon: Yes, it does show it.

Socrates: Do we not then in other cases, and very frequently, perceive, when the appetites compel any one against his reason, that he reproaches himself, and is angry at the compelling principle within him; and that like two persons at variance, the anger of such a person becomes an ally to reason; but that it sides with the desires when reason decides that no opposition is to be offered, you will say, I think, that you have never perceived anything of this kind either in yourself, nor yet in any other?

Glaucon: No, by Zeus.

Socrates: What then, is it not the case, when a man imagines he is doing a wrong, that the more generous he is, the less is he apt to be angry, however he may suffer hunger or cold, or other like privations, from one, who, as he thinks, inflicts them with justice? And, as I have said, his anger will not incline him to rise up against such an one.

Glaucon: True.

Socrates: But what; when a man thinks himself injured, does he not in this case boil with rage and become indignant and ally himself on the side of what seems just; and under all the sufferings of hunger, cold, and the like, does he not bear up and strive to conquer; nor does he cease from his generous toils, until he has either accomplished them, or dies, or, like a dog by the shepherd, is called off and pacified by the rational principle within him?

Glaucon: Certainly, it is precisely like what you say; for, in our state, we appointed the auxiliaries to be obedient, like dogs, to the state rulers, as being shepherds of the state.

Socrates: You quite understand, what I mean to say; but have you considered this also?

Glaucon: What?

Socrates: That here apparently, as regards the irascible, the reverse takes place from what took place in the former instance, for then we reckoned it the same as the concupiscent; but now we say it is far from it, or rather that, in the sedition of the soul, it more willingly arrays itself on the side of the rational part.

Glaucon: Entirely so.

Socrates: Is it then as something entirely distinct, or as a species of the rational; so as that there are not three species, but only two in the soul, the rational and concupiscent? or, as there were three species which completed the city, the money-getting, the auxiliary, the deliberative; so, in the soul, is this irascible a third natural principle, auxiliary to the rational, when not corrupted by bad education?

Glaucon: Of course, it must, be a third.

Socrates: Yes, if at least it seem at all different from the rational, just as it seemed to be distinct from the concupiscent.

Glaucon: Aye, that is not hard to see; and as a proof of this, one may see, even; little children, that quite from their infancy they are full of anger, while some of them, at least in my opinion, never have any share in reason, the majority indeed only arriving at it but late in life.

Socrates: Aye, truly, you are right And in the brute beasts, too, one may observe yet further, that what you say is really the case; and besides this, it is attested also by what we formerly cited from Homer

His breast he struck, and thus his heart reproved;

for, in this passage, Homer has plainly made one part reprove the other; that part, namely, which reasons about good and evil, to reprove the part which is unreasonably angry.

Glaucon: You are quite right.

Socrates: These things, we have agreed to after some difficulty; and it is now sufficiently acknowledged, that the same sort of principles that are in a state reside also in the soul of every individual, and equal in number. Must it not, then, necessarily follow, that in whatever manner the state is wise, and in whatever respect, after the same manner and in the same respect, the individual is so also?

Glaucon: Of course.

Socrates: And in whatever respects, and after whatever manner, the individual is brave, in the same respect, and after the same manner, a state is brave also? and so in all other respects, both are the same as regards virtue?

Glaucon: Necessarily so.

Socrates: And I think, Glaucon, it may be said that a man is so just in the same way as a state is so.

Glaucon: This also must needs be the case.

Socrates: Aye; but have we not somehow or other forgotten this, that the state is just, when every one of the three species in it does its own particular work?

Glaucon: No, I do not think we have forgotten that point.

Socrates: We must remember then likewise, that each of us will be just, and do his own work, each part of whose soul does its own proper duty.

Glaucon: Aye, we must be sure to recollect that.

Socrates: Is it not proper, then, that the rational part should govern, as being wise, and charged with the care of the whole soul; and that the spirited part should obey and ally itself to the other?

Glaucon: Certainly.

Socrates: Will not the mixture then, as we said, of music and gymnastics, make the two to harmonize by exalting and nurturing the one with excellent arguments and good discipline, while it unbends the other by soothing and rendering it mild through harmony and rhythm?

Glaucon: Assuredly.

Socrates: And when these two are thus nurtured and have been truly taught and practised in their own affairs, they will preside over the concupiscent part, which in every one occupies the largest part of the soul,

and by its nature is insatiable of wealth; and they will take care, lest, having acquired growth and strength by being filled with bodily pleasures, as they are termed, it become discontented with its own work, and so attempt to enslave and rule over those it ought not, and thus wholly upset the entire system of life.

Glaucon: Certainly.

Socrates: And by this principle, will not the two maintain a good guard against enemies from without, owing to their joint influence over both soul and body, the one laying down the plans, and the other fighting in obedience to its leader, and executing with fortitude the plans laid down?

Glaucon: Such is the case.

Socrates: And I think we call a man brave, when, through all the pains and pleasures of life, the spirit maintains the opinion dictated by reason about what is terrible, and what is not so.

Glaucon: Right.

Socrates: And we call a man wise, from that small part which governs him, and dictates this, inasmuch as it possesses the knowledge of what is expedient for each separately, and for the whole of the three together.

Glaucon: Certainly.

Socrates: And, do we not moreover term a man temperate, from the association and harmony of these very principles, when the governing and governed agree in one, namely, when reason governs, and when the others are not at variance therewith?

Glaucon: Temperance, is no other than this, either as respects the state or the individual.

Socrates: But he will be just, owing to those causes and in the manner which we have often before mentioned?

Glaucon: He must.

Socrates: What then; has anything blunted us, that we should regard justice as anything else than what it is seen to be in a state?

Glaucon: Not in my opinion at least.

Socrates: In this manner then (if there yet remain any doubt in the soul), let us, by all means, satisfy ourselves by bringing the man into difficult circumstances.

Glaucon: As what?

Socrates: For instance, if we be compelled to declare, concerning such a state and a man born and educated conformably thereto, whether such a man, if intrusted with gold or silver, is likely to embezzle it, who do you think would imagine, that such an one would do it sooner than those of a different character?

Glaucon: No one would.

Socrates: Will not such an one then be free from sacrileges, thefts, and treacheries, either privately against his friends, or publicly against the state?

Glaucon: He will.

Socrates: Nor will he ever, in any shape, be faithless, either as to his oaths, or other compacts?

Glaucon: How should he.

Socrates: Adulteries, neglect of parents, and impiety against the gods, will be found then in any one rather than such a man as this?

Glaucon: Aye, in any one else, truly.

Socrates: And is not this the cause of all these things, that, of all the parts within him each separate one does its own work, as to governing and being governed?

Glaucon: This is it, and nothing else.

Socrates: What else do you wish justice to be, except such a power as produces men and states like these?

Glaucon: Not I, truly, for my part.

Socrates: Our dream then, which we conjectured, is at last accomplished; that on our very first attempt to found our state we have apparently arrived by divine assistance at a principle and pattern of justice?

Glaucon: Quite so.

Socrates: And that, Glaucon, was a certain image of justice, that the man naturally fitted for the office of a shoemaker, should make shoes properly, and do nothing else; and that he also, who is a. carpenter, should do that work, and so also, of the rest.

Glaucon: It appears so.

Socrates: In truth, then, of such a kind was justice, as it seems; nor does it regard merely a mans external action, but what is really internal, relating to the man himself, and what is properly his own; not allowing any principle in him to attempt what is another's province, or to meddle and interfere with what does not belong to it; but really well establishing his own proper affairs, and maintaining proper self-government, keeping due order, becoming his own friend, and most naturally attuning these three principles, as three musical strings, base, tenor, and treble, or whatever others may intervene; thus will he be led to combine all these together, and out of many to form one whole, temperate, attuned, and able to perform whatever is to be done, either in acquiring wealth, or managing the body, or any public affair or private bargain, and in all these cases reckoning that action to be just and good, which always sustains and promotes this habit; and so also calling the knowledge which presides over this action wisdom, and on the contrary, calling that an unjust action, which destroys this habit, and the opinion which presides over this, folly.

Glaucon: Perfectly true, Socrates.

Socrates: Be it so; if then we should say, that we have found out a just man and state, and the nature of justice in both, I think we should not be considered altogether in error.

Glaucon: No, by Zeus.

Socrates: May we assume it, then?

Glaucon: We may.

Socrates: Be it so. But we were next, I think, to consider injustice?

Glaucon: Clearly so.

Socrates: Is it not then necessarily a kind of variance between the three principles, a kind of meddling and interfering spirit in things foreign to their proper business, and an insurrection of some one principle against the whole soul, to govern where it is not its province, though it be really of such a nature, that it ought to be in subjection to the governing principle? I imagine then we are to call this tumult and error by some such names as these, injustice, intemperance, cowardice, folly, and in a word, all vices?

Glaucon: Just so.

Socrates: To commit injustice then, and to be injurious, and likewise to act justly, all these must be very manifest, if indeed injustice and justice are so.

Glaucon: How?

Socrates: Because, they do not differ from what is salutary or noxious; as the latter are in the body, so are the former in the soul.

Glaucon: In what way?

Socrates: Such things as are healthy produce health, and such as are noxious, disease.

Glaucon: Yes.

Socrates: And does not acting justly produce justice, and acting unjustly, injustice?

Glaucon: Necessarily so.

Socrates: To produce health, however, is to establish everything in the body, so that they shall mutually govern and be governed, conformably to nature, while the production of disease, on the other hand, consists in one part governing and being governed by another, contrary to nature.

Glaucon: It is indeed.

Socrates: Then again, to produce justice, is it not to establish all in the soul, so that its parts shall mutually govern and be governed according to nature; and does not injustice consist in governing and being governed by one another contrary to nature?

Glaucon: Plainly so.

Socrates: Virtue then, as it seems, is a kind of health, beauty, and good habit of the soul; and vice its disease, deformity, and infirmity?

Glaucon: It is so.

Socrates: Do not honourable pursuits then lead to the attainment of virtue, but dishonourable to that of vice?

Glaucon: They must.

Socrates: What remains for us to consider then is, whether it be profitable to act justly, and pursue what is honourable, and to be just, and whether a man can be of such a character unconsciously or not; or to act unjustly, and to be unjust, though one be never punished, or reformed by correction?

Glaucon: But, Socrates, this inquiry seems, to me at least, quite ridiculous; that if in a corrupt state of the body life be deemed not worth

possession, not even though accompanied by all kinds of meats and drinks, and all wealth and power, yet when the nature of the vital principle is disordered and thoroughly corrupted, life will then be worth having, though a man were to do everything else that he likes, except ascertaining how he shall get released from vice and injustice, and cultivate justice and virtue, since both these things have been proved such as we have represented them.

Socrates: Aye, it would be truly ridiculous. However, since we have arrived at such a point as enables us most distinctly to perceive that these things are so, we must not get weary.

Glaucon: On no account, by Zeus, must we be weary.

Socrates: Come then, and let us see also how many principles vice possesses, principles indeed that are worthy of attention.

Glaucon: I am all attention; only tell me.

Socrates: And truly now; since we have reached this part of our discourse, it appears to me, as to one looking from a height, that there is but one principle of virtue, while those of vice are infinite; and of these there are four, particularly deserving of mention.

Glaucon: How say you?

Socrates: There seem to be as many classes of the soul as there are forms of government.

Glaucon: How many then?

Socrates: Five, of governments, and five of the soul.

Glaucon: Name them.

Socrates: What we have just described, is one species of government; and it may have a twofold appellation; for, if among the rulers one prevails over the rest, it may be termed a Monarchy, but if there be several, an Aristocracy.

Glaucon: True.

Socrates: I call this then, one species; for, whether there be several, or whether it be but one who governs, they will never alter the principal laws of the state, because they will observe the nature and education we have described.

Glaucon: It is not likely.

Casting_Chr_1:
THE END OF THE FOURTH BOOK.

The Republic, b4, Bohn.

Plato's Model

Socrates:: Then do you think that there is a particle of difference between the condition of blind persons, and the state of those who are absolutely destitute of the knowledge of things as they really are, and who possess in their Soul no distinct exemplar, and cannot, like painters, fix; their eyes on perfect truth as a perpetual standard of reference, to be contemplated with the minutest care, before they proceed to deal with earthly canons about things beautiful and just and good, laying them down where they are required, and where they already exist watching over their preservation? The Republic of Plato, book 6, John Llewelyn Davies and David James Vaughan.

Socrates:: What difference then is there between blind persons and those who are in fact deprived of the knowledge of each individual essence, and have no clear demonstration of it in the soul, and cannot like painters who look at what is positively true, and refer everything thereto, examining it with all possible accuracy, if need be, form settled notions, of the beautiful, just, and good, and so maintain them, as if sanctioned bylaw? The Republic of Plato, book 6, Henry Davis.

Socrates:: Do you think, then, that there's any difference between the blind and those who are really deprived of the knowledge of each thing that is? The latter have no clear model in their souls, and so they cannot—in the manner of painters—look to what is most true, make constant reference to it, and study it as exactly as possible. Hence they cannot establish here on earth conventions about what is fine or just or good, when they need to be established, or guard and preserve them, once they have been established. The Republic of Plato, book 6, G.M.A. Grube, rev. C.D.C. Reeve.

Socrates:: And are not those who are verily and indeed wanting in the knowledge of the true being of each thing, and who have in their souls no clear pattern, and are unable as with a painter's eye to look at the absolute truth and to that original to repair, and having perfect vision of the other world to order the laws about beauty, goodness, justice in this, if not already ordered, and to guard and preserve the order of them—are not such persons, I ask, simply blind? The Republic of Plato, book 6, Jowett 3rd ed.

Socrates:: 'Then are they any better than blind who are always and in every case without the knowledge of that which really is, who have no distinct pattern in their soul, and cannot look away, like painters, to the perfect truth, and contemplate the standard which they have yonder with the greatest care, before they prescribe the earthly notions concerning things beautiful and just and good, when such prescription is necessary, and who cannot guard and preserve them when once prescribed?' The Republic of Plato, book 6, A. D. Lindsay.

Socrates:: Do you think, then, that there is any appreciable difference between the blind and those who are veritably deprived of the knowledge of the veritable being of things, those who have no vivid pattern in their souls and so cannot, as painters look to their models, fix their eyes on the absolute truth, and always with reference to that ideal and in the exactest possible

contemplation of it establish in this world also the laws of the beautiful, the just, and the good, when that is needful, or guard and preserve those that are established? The Republic of Plato, book 6, A. Paul Shorey.

Socrates:: Whether then do those appear to you to differ from the blind, who are wholly deprived of the knowledge of each particular being, and have neither a clear model in their soul, nor are able, as painters looking up to the truest model, and always referring themselves thither, and contemplating it in the most accurate manner possible, to establish here too in like manner just maxims of the beautiful, and just and good, if there be occasion to establish them, and to guard and preserve such as are already established? The Republic of Plato, book 6, H. Spens. 1763.

Socrates:: Whether then do those appear to you to differ from the blind, who are in reality deprived of the knowledge of each particular being, and have neither a clear paradigm in their soul, nor are able, as painters looking up to the truest paradigm, and always referring themselves thither, and contemplating it in the most accurate manner possible, to establish here too in like manner just maxims of the beautiful, and just, and good, if there be occasion to establish them, and to guard and preserve such as are already established? The Republic of Plato, book 6, Thomas Taylor.

Predicating material difference *of* a form.

A Point about Position.

A statement that one will easily find in the exposition of mathematical ideas is that a point has position.

To each point there corresponds one pair of numbers, and to each pair of numbers there corresponds one point. The pair of numbers are called the coordinates of the point. Then the points whose coordinates satisfy some fixed relation can be indicated in a convenient way, by drawing a line, if they all lie on a line, or by shading an area if they are all points in the area. Whitehead

If the relation can be represented by an equation such as $x + y = 1$, or $y^2 = x$, then the points lie on a line, which is straight in the former case and curved in the latter. Whitehead

At the same time, it is a pity that Riemann, in accordance with the metrical bias of his time, regarded space as primarily a magnitude[1], or assemblage of magnitudes, in which the main problem consists in assigning quantities to the different elements or points, without regard to the qualitative nature of the quantities assigned. Russell

[1] Compare Erdmann's " *Grössenbegriff vom Raum.*"

"Grammar is a very old field of study. Did you know that the sentence was first divided into subject and verb by Plato, the famed philosopher from ancient Greece? That was about 2,400 years ago! Ever since then, students all over the world have found it worthwhile to study the structure of words and sentences. Why? Because skill in speaking and writing is the hallmark of all educated people. *Basic English for English Language* Learners by Anne Seaton and Y. H. Mew

Reason

"It is agreed by all jurists, and is established by the law of this and every other country, that it is the reason of man which makes him accountable for his actions, and that the deprivation of reason acquits him of crime. This principle is indisputable; yet so fearfully and wonderfully are we made, so infinitely subtle is the spiritual part of our being, so difficult is it to trace with accuracy the effect of diseased intellect upon human action, that I may appeal to all who hear me, whether there are any causes more difficult, or which, indeed, so often confound the learning of the judges themselves, as when insanity, or the effects and consequences of insanity, become the subjects of legal considerations and judgment." ***Homicidal Insanity***, Thomas, Lord Erskine, (1750-1823)

"the definitive *that*, instead of being a conjunction, is the representative of a sentence or distinct clause, preceding that clause, and pointing the mind to it, as the subject which follows." An Improved Grammar of the English Language by Noah Webster.

These criticisms, already extended to an inconvenient length, considering the limited nature of this work, may serve to show the reader how artificial and arbitrary are the distribution and denominations of the several species of words, in our grammars, and how ill calculated are the common rules to illustrate the origin or the true principles of language. Before a language can be correctly understood, words must be traced to their source, their radical significations explained, their mutations, contractions, and combinations, developed. It is not the English language only whose history and principles are yet to be illustrated; but the grammars and dictionaries of all other languages, with which I have any acquaintance, must be revised and corrected, before their elements and true construction can be fully understood. *An Improved Grammar of the English Language*, Noah Webster, 1839

"All information can be rendered digitally, in a series of 1's and 0's." The X files, season 1, episode 4

Our Grammar Matrix

We are a form of life, as a form of life we have absolutely no rights at all, instead, by biological fact, we have responsibilities, however, at this time in our evolution we do not recognize nor accept our own responsibilities, we act as if we are entitled, that we have rights. Our current behavior is the behavior of the mentally defective invalid. By biological fact, we are not entitled, we have no rights, we have a job which we are ignoring and not doing. We are, in fact, feeble minded.

Every form of life is composed of a number of life support systems, each of these systems, in order for that form of life to live, has to do its biologically defined job, the mind, as potentially the most powerful life support system possible, is no exception. A life support system which does not function, does not do its job, leads to the death of that organism, immediately or slowly and painfully.

So, ignore your job, but in so doing, you have condemned yourself to death. It is a simple biological fact. The preference to die, instead of doing your own work, is the results of the enfeebled mind of the delusional entitled. No one is entitled, absolutely no one.

A mind is potentially the most powerful life support system possible; it achieves that power through information processing which allows a mind to judge any behavior by virtually modeling it before putting that behavior into action. Grammar gives us the ability to sandbox behavior in order to ensure that it is the best behavior available. This fact has several names, judgment and prophecy being two of them. We simply function through predictive behavior; if such and such, then such and such, unless, of course, we are too stupid to do so.

A mind is potentially the most powerful life support system possible, therefore it has a well-defined biologically determined job to perform and well-defined physically determined means of doing that job.

The ability to manage information to our advantage is afforded by Language; Language is Universal and Intelligible, while Grammar is Particular and Perceptible. The definition of any and every thing is binary as a relative within correlatives, all information is managed by binary recursion. Mankind did not believe the Bible, on this matter, mankind did not believe Plato, on this matter, Mankind did not believe his own body, on this matter, and today, we have the computer processing all information globally, and mankind still does not believe it. How feeble minded can one be? Obviously, grossly.

Nobody speaks Language, and by *a language* we actually mean a system of grammar. Binary recursion affords us exactly four categories of grammar which have historical names; Common Grammar, Arithmetic, Algebra and Geometry; each of these employs binary recursion in a specific manner, however, binary

recursion is not different from itself no matter which method is used. At the foundation of grammar is a behavior the feeble mind of mankind has yet to achieve, the simple ability to give their word, and keep it. Mankind has yet to achieve the very simple criteria of establishing naming conventions. Today, they are not conventional, because the feeble minded cannot, will not, give and keep their own words, what they can actually name.

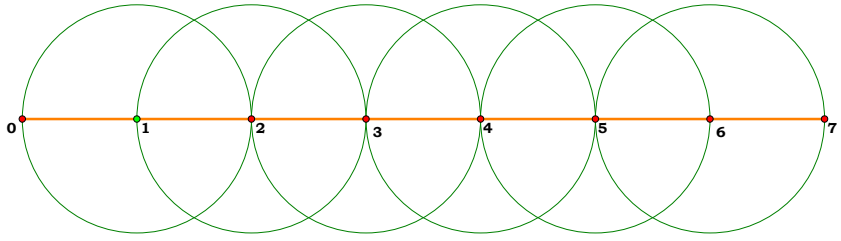
Of the four members of our Grammar Matrix, geometry is our Meta-Grammar. As intimated in the Bible, and by Plato, and by common sense, we can learn how to give and keep our word by using our own hand to study grammar systems. Our own hand can teach us how feeble or how powerful our own mind is. Our own hand can teach us how to give and keep our own words, or we will find, we are too stupid to do something simple.

Geometry can teach us, as both the Bible and Plato state, the Art of Mensuration which covers both analog information processing and logical information processing.

I will example all of this, so that you can repeat it in order to either understand it, or with a feeble mind, deny it.

Analogical Information Processing

Simple Arithmetic Recursion

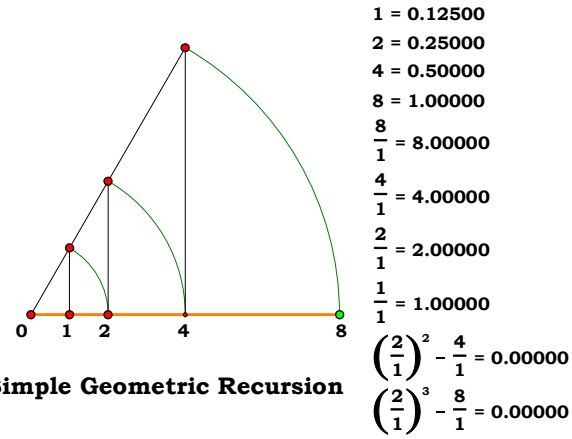


0 = 0.00000 4 = 4.00000
1 = 1.00000 5 = 5.00000
2 = 2.00000 6 = 6.00000
3 = 3.00000 7 = 7.00000

Simple Arithmetic Recursion

We can assign names and standardized some relative difference, be it solid, liquid or gas. However, the ability to standardize them grammatically does not mean that we know how to apply them physically.

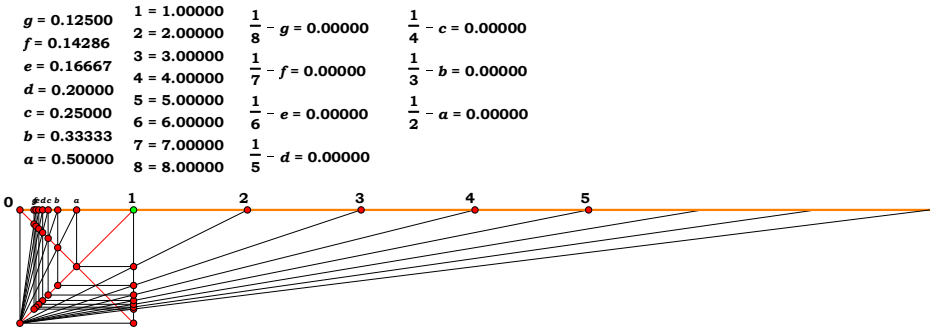
Simple Geometric Recursion



Simple Geometric Recursion

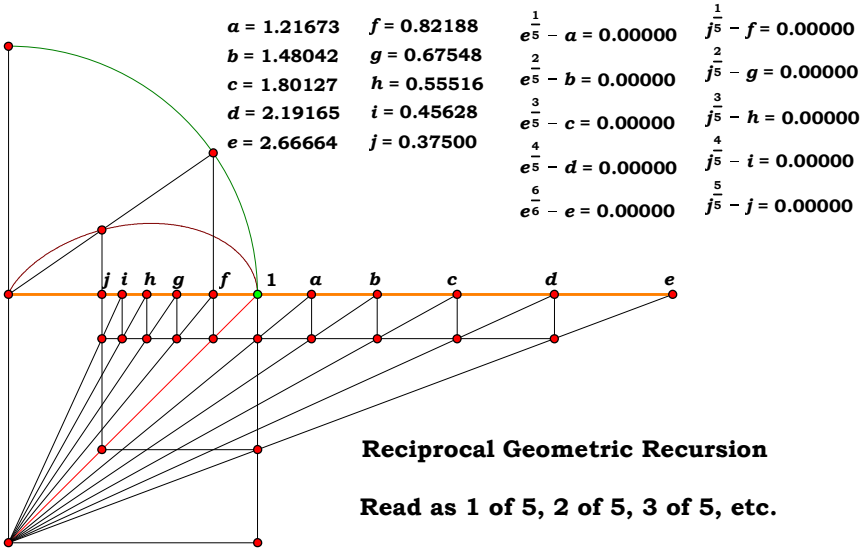
For some reason, I once found an a relatively late Algebra book, that exponential notation was not demonstrable in geometry. Nothing like being ignorant of geometry.

Reciprocal Arithmetic Recursion



Reciprocal Arithmetic Recursion

Reciprocal Geometric Recursion



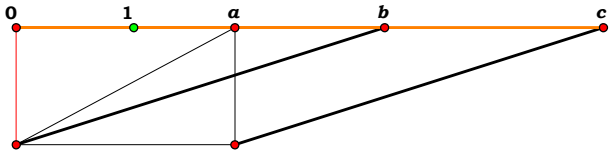
Reciprocal Geometric Recursion

Read as 1 of 5, 2 of 5, 3 of 5, etc.

Addition A

$a = 1.86112$
$b = 3.13450$
$c = 4.99562$
$a + b - c = 0.00000$

Addition



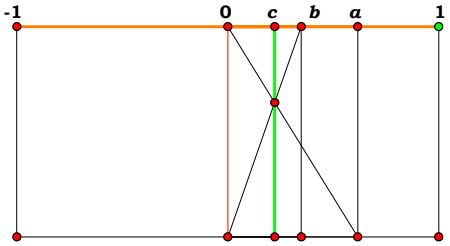
Addition B

$a = 0.61564$
$b = 0.34818$
$c = 0.22240$

$\frac{a \cdot b}{a + b} - c = 0.00000$

$\frac{1}{a} + \frac{1}{b} - \frac{1}{c} = 0.00000$

Addition

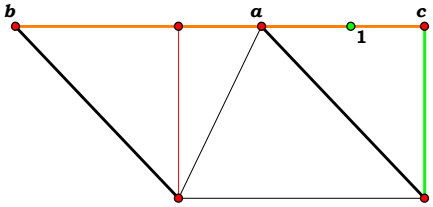


Subtraction A

$a = 0.48187$
$b = -0.94633$
$c = 1.42821$

$a - b - c = 0.00000$

Subtraction



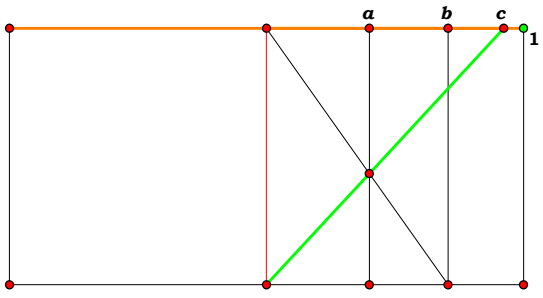
Subtraction B

$a = 0.40001$
$b = 0.70616$
$c = 0.92266$

$\frac{a \cdot b}{b - a} - c = 0.00000$

$\frac{1}{a} - \frac{1}{b} - \frac{1}{c} = 0.00000$

Subtraction



Multiplication A

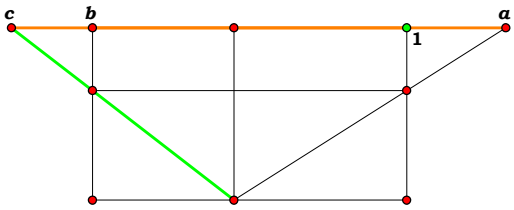
$a = 1.57335$

$b = -0.81861$

$c = -1.28795$

$a \cdot b - c = 0.00000$

Multiplication



Multiplication B

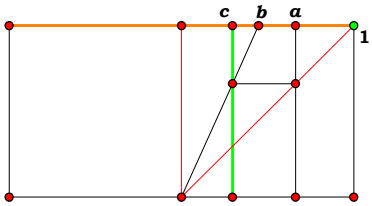
$a = 0.66180$

$b = 0.44719$

$c = 0.29595$

$a \cdot b - c = 0.00000$

Multiplication



Division A

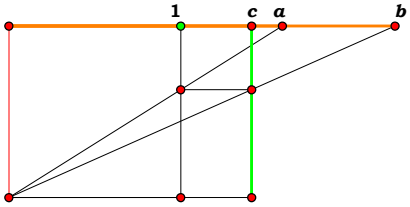
$a = 1.59077$

$b = 2.24681$

$c = 1.41241$

$\frac{b}{a} - c = 0.00000$

Division



Division B

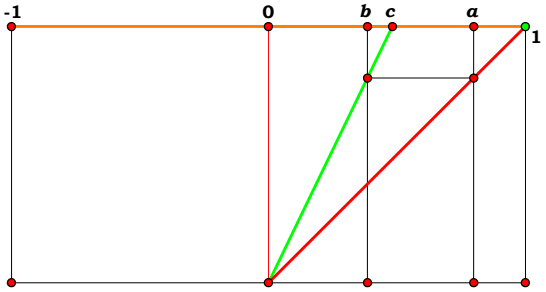
$a = 0.79862$

$b = 0.38529$

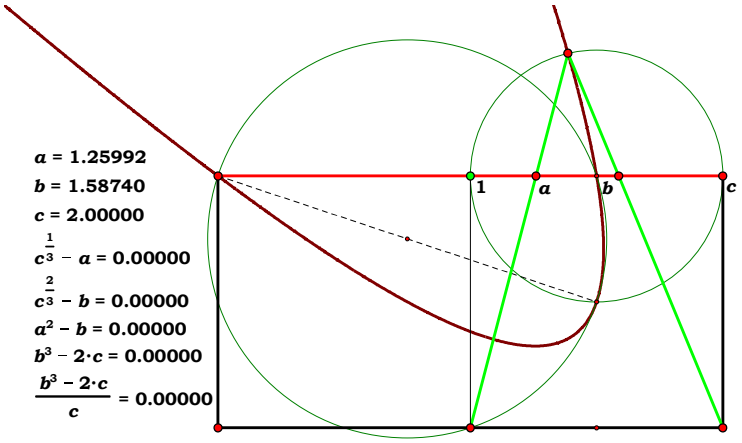
$c = 0.48244$

$\frac{b}{a} - c = 0.00000$

Division

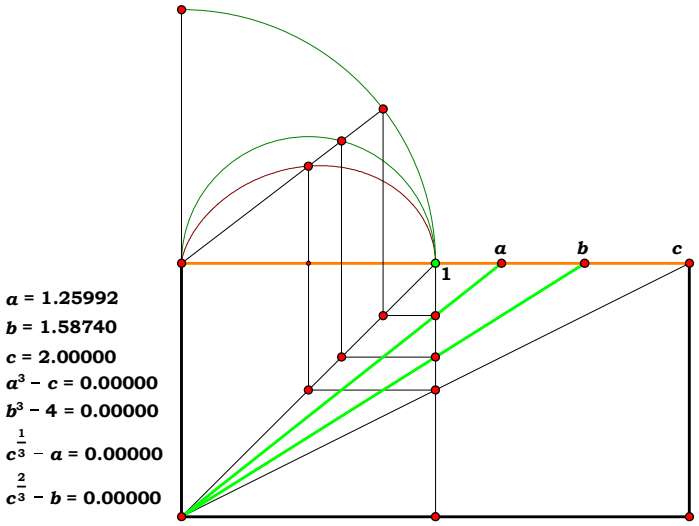


Duplicating the Cube A



Duplicating the Cube

Duplicating the Cube B



Duplicating the Cube

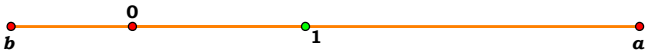
Our Analogical operations afford us all we require for logical operators in order to perform any judgment.

Logical Information Processing

The Law of Identity

$a = 2.93189$ $\quad a - a = 0.00000$

$b = -0.70249$ $\quad b - b = 0.00000$



In the words of Plato, Relation to self is inadmissible.

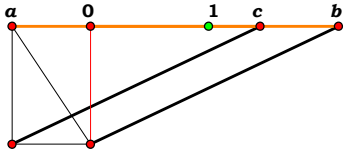
Law of Identity

The Law of Identity comes in many forms. When we understand that a thing, in common grammar is a noun, i.e., a correlative, it can then be realized that, we are simply repeating that a noun is not a verb, a point is that which has no part, a container is not the contained, the map is not the territory, etc. Still, today, the feeble minded insist in their delusional state, that a thing is different from itself, a noun is a verb, etc. The feeble minded simply cannot process information in accordance with the Law of Identity, or as Confucius said, the Truth of Things. It is wholly pathetic to realize that the delusional feeble minded are in awe of this bizarre lack of intelligence and wisdom; it is called magic.

Addition A

Unit = 1.00000
0 = 0.00000
1 = 1.00000

$a = -0.66352$
$b = 2.09994$
$c = 1.43642$
$a + b - c = 0.00000$



Addition

$1 \cdot 1 = 1.00000$
$1 \cdot (-1) = -1.00000$

Yes = 1.00000
No = −1.00000

$$\frac{a-b}{\sqrt{(a-b)^2}} = -1.00000$$

$$\frac{b-a}{\sqrt{(b-a)^2}} = 1.00000$$

$$\frac{a-c}{\sqrt{(a-c)^2}} = -1.00000$$

$$\frac{b-c}{\sqrt{(b-c)^2}} = 1.00000$$

$$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}} = -1.00000$$

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

Is A greater than B? = −1.00000
Is B greater than A? = 1.00000
Is A greater than C? = −1.00000
Is B greater than C? = 1.00000

Are A and B both positive or negative? = −1.00000

Logical operators function because of two things, operations on information are a given, and two, when paired with a convention of names, that convention is upheld by the operations performed with them. As Plato pointed out, if two things are not equal, one is greater than the other, while the other is less than the first. Logical operators tell you exactly when this happens and thus, one can make any judgment whatsoever, equal, not equal, greater or less. Thus, with the

simple logical operator, all judgments, whatsoever, can be made. There has never been any need for obfuscating judgment with phony jargon, or deliberate contradictions used constantly by the feeble minded.

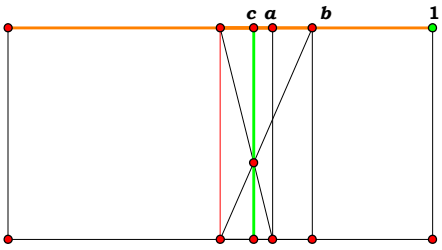
Addition B

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = 0.24639
b = 0.43339
c = 0.15709

$\frac{a \cdot b}{a + b} - c = 0.00000$

$\frac{1}{a} + \frac{1}{b} - \frac{1}{c} = 0.00000$



Addition

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
1·(−1) = −1.00000

Yes = 1.00000
No = −1.00000

$\frac{a - b}{\sqrt{(a - b)^2}} = -1.00000$
$\frac{b - a}{\sqrt{(b - a)^2}} = 1.00000$
$\frac{a - c}{\sqrt{(a - c)^2}} = 1.00000$
$\frac{b - c}{\sqrt{(b - c)^2}} = 1.00000$

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}} = 1.00000$

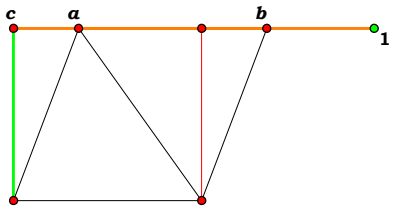
Is A greater than B? = −1.00000
Is B greater than A? = 1.00000
Is A greater than C? = 1.00000
Is B greater than C? = 1.00000

Are both A and B positive or negative? = 1.00000

Subtraction A

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = −0.71410
b = 0.37737
c = −1.09147



Subtraction

$a - b - c = 0.00000$

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
1·(−1) = −1.00000

Yes = 1.00000
No = −1.00000

$\frac{a - b}{\sqrt{(a - b)^2}} = -1.00000$
$\frac{b - a}{\sqrt{(b - a)^2}} = 1.00000$
$\frac{a - c}{\sqrt{(a - c)^2}} = 1.00000$
$\frac{b - c}{\sqrt{(b - c)^2}} = 1.00000$

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}} = -1.00000$

Is A greater than B? = −1.00000
Is B greater than A? = 1.00000
Is A greater than C? = 1.00000
Is B greater than C? = 1.00000

Are A and B both positive or negative? = −1.00000

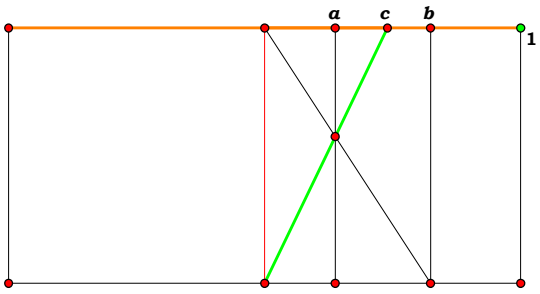
Subtraction B

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = 0.27561
b = 0.64785
c = 0.47969

$\frac{a \cdot b}{b - a} - c = 0.00000$

$\frac{1}{a} - \frac{1}{b} - \frac{1}{c} = 0.00000$



Subtraction

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
1 − (−1) = 2.00000

Yes = 1.00000
No = 2.00000

$\frac{a - b}{\sqrt{(a - b)^2}} = -1.00000$
$\frac{b - a}{\sqrt{(b - a)^2}} = 1.00000$
$\frac{a - c}{\sqrt{(a - c)^2}} = -1.00000$
$\frac{b - c}{\sqrt{(b - c)^2}} = 1.00000$

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}} = 1.00000$

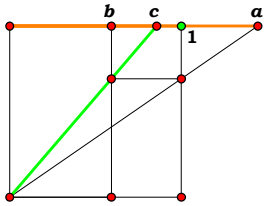
Is A greater than B? = −1.00000
Is B greater than A? = 1.00000
Is A greater than C? = −1.00000
Is B greater than C? = 1.00000

Are A and B both positive or negative? = 1.00000

Multiplication A

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = 1.44562
b = 0.59218
c = 0.85607
a·*b* − *c* = 0.00000



Multiplication

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
1·(−1) = −1.00000

Yes = 1.00000
No = −1.00000

$\frac{a - b}{\sqrt{(a - b)^2}} = 1.00000$
$\frac{b - a}{\sqrt{(b - a)^2}} = -1.00000$
$\frac{a - c}{\sqrt{(a - c)^2}} = 1.00000$
$\frac{b - c}{\sqrt{(b - c)^2}} = -1.00000$

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}} = 1.00000$

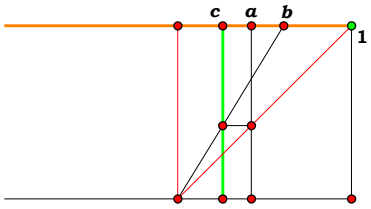
Is A greater than B? = 1.00000
Is B greater than A? = −1.00000
Is A greater than C? = 1.00000
Is B greater than C? = −1.00000

Are both A and B positive or negative? = 1.00000

Multiplication B

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = 0.42376
b = 0.60975
c = 0.25839
$a \cdot b - c$ = 0.00000



Multiplication

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
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Yes = 1.00000
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$\frac{b-a}{\sqrt{(b-a)^2}}$ = 1.00000
$\frac{a-c}{\sqrt{(a-c)^2}}$ = 1.00000
$\frac{b-c}{\sqrt{(b-c)^2}}$ = 1.00000

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}}$ = 1.00000

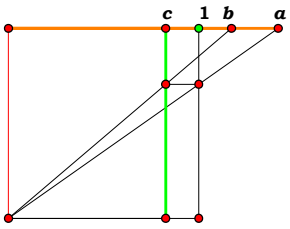
Is A greater than B? = −1.00000
Is B greater than A? = 1.00000
Is A greater than C? = 1.00000
Is B greater than C? = 1.00000

Are A and B both positive or negative? = 1.00000

Division A

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = 1.41720
b = 1.17171
c = 0.82678
$\frac{b}{a} - c$ = 0.00000



Division

Logical Operations or Judgments. right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
1·(−1) = −1.00000

Yes = 1.00000
No = −1.00000

$\frac{a-b}{\sqrt{(a-b)^2}}$ = 1.00000
$\frac{b-a}{\sqrt{(b-a)^2}}$ = −1.00000
$\frac{a-c}{\sqrt{(a-c)^2}}$ = 1.00000
$\frac{b-c}{\sqrt{(b-c)^2}}$ = 1.00000

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}}$ = 1.00000

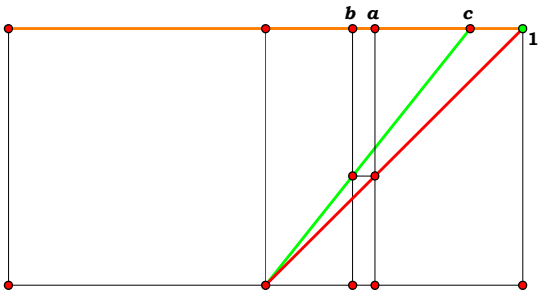
Is A greater than B? = 1.00000
Is B greater than A? = −1.00000
Is A greater than C? = 1.00000
Is B greater than C? = 1.00000

Are A and B both positive or negative? = 1.00000

Division B

Unit = 1.00000
0 = 0.00000
1 = 1.00000

a = 0.42543
b = 0.33864
c = 0.79599
$\frac{b}{a} - c$ = 0.00000



Division

Logical Operations or Judgments.
right or left, up or down, right or wrong, good or evil, etc.

1·1 = 1.00000
1·(−1) = −1.00000

Yes = 1.00000
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$\frac{a-c}{\sqrt{(a-c)^2}}$ = −1.00000
$\frac{b-c}{\sqrt{(b-c)^2}}$ = −1.00000

$\frac{a \cdot b}{\sqrt{(a \cdot b)^2}}$ = 1.00000

Is A greater than B? = 1.00000
Is B greater than A? = −1.00000
Is A greater than C? = −1.00000
Is B greater than C? = −1.00000

Are both A and B positive or negative? = 1.00000

One can see, that Logic only determines an answer, it does not determine the processes involved in the judgment in any manner. Logic is independent of the information, itself, in every way, in short, judgment determines what is, while mathematics is a process to change what can be.

Ask yourself, has anyone taught you simple and basic reasoning? Or what our biologically defined job is? Have you ever known anyone who was not feeble minded? Who has ever taught you to read and write and behave in accordance with the Word of God, which is all around us? Who have you ever known who has not usurped the Word of God in order to make you believe that your master is anyone or anything else but God?

If you cannot give and keep your word, you are not the least bit literate, you are factually, and provably illiterate and feeble minded.

Psychology is commensurate with the principles of Language functionally resident in the mind as a Grammar Matrix. If our Grammar Matrix is not functionally resident in our mind, we are, by fact, feeble minded.

It is wholly impossible for a Grammar Matrix to be demonstrated unless everything were spoken. If you do not know our Grammar Matrix, cannot use it, you cannot claim to have known a thing about the Word of God.